FILE 'HCAPLUS' ENTERED AT 15:39:08 ON 03 MAY 2004

FILE COVERS 1907 - 3 May 2004 VOL 140 ISS 19
FILE LAST UPDATED: 2 May 2004 (20040502/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=>d que l3
L1          473667 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POLYSACCHARIDES+OLD,NT/CT
L2             171 SEA FILE=HCAPLUS ABB=ON  PLU=ON  OLIGOAMINE
L3              13 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND L2

=>d que l18
L1          473667 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POLYSACCHARIDES+OLD,NT/CT
L4             454 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "CATIONS (L) POLYVALENT"/CT
L5            3604 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "POLYELECTROLYTES (L)
                   CATIONIC"/CT
L6            4025 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L4 OR L5
L17           7041 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND (12-L16 OR MACROMOL?)
L18             25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 AND L6

=>d que l21
L1          473667 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POLYSACCHARIDES+OLD,NT/CT
L17           7041 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L1 AND (12-L16 OR MACROMOL?)
L20            106 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 AND BIODEGRAD?
L21              2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND POLYCAT?

=>d que l37
L7                  STR

N~Ak~N~Ak~N~Ak~N
1   2   3   4   5   6   7

NODE ATTRIBUTES:
CONNECT IS E2  RC AT   2
CONNECT IS E2  RC AT   4
CONNECT IS E2  RC AT   6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L8       245752 SEA FILE=REGISTRY ABB=ON  PLU=ON  N>3 AND C>3 AND NC=1 NOT
                (IDS/CI OR PMS/CI OR RSD/FA)
L10        3038 SEA FILE=REGISTRY SUB=L8 SSS FUL L7
L11       19796 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10 OR OLIGOAMIN? OR OLIGO(W)A
                MIN?
L12       46732 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PLASMIDS+OLD,NT/CT
L13       61371 SEA FILE=HCAPLUS ABB=ON  PLU=ON  OLIGONUCLEOTIDES+OLD,NT/CT
L14       34176 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ANTISENSE
L15      436880 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PEPTIDES+NT/CT
L16      715223 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PROTEINS+OLD/CT
L27       14883 SEA FILE=HCAPLUS ABB=ON  PLU=ON  DEXTRAN+NT/CT
L28        2206 SEA FILE=HCAPLUS ABB=ON  PLU=ON  PULLULAN/CT
L29      164682 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CELLULOSE+NT/CT
L30        3441 SEA FILE=HCAPLUS ABB=ON  PLU=ON  INULIN/CT
L31       13389 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CHITOSAN/CT
L32        8600 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ALGINIC ACID+NT/CT
L33       10929 SEA FILE=HCAPLUS ABB=ON  PLU=ON  HYALURONIC ACID/CT
L34      208144 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L27 OR L28 OR L29 OR L30 OR
                L31 OR L32 OR L33)
L35       13665 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 AND (L12 OR L13 OR L14 OR
                L15 OR L16)
L36          77 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L11
L37          19 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 AND (BIODEGRAD? OR
                POLYCAT? OR MACROMOL?)


=> s l3 or l18 or l21 or l37
L39          54 L3 OR L18 OR L21 OR L37

=> d l39 ibib ab hitind hitstr 1-54

L39  ANSWER 1 OF 54  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2004:180120  HCAPLUS
DOCUMENT NUMBER:          140:218655
TITLE:                    Surfactant-free oil-in-water emulsions having good
                          storage stability and their preparation
INVENTOR(S):              Mori, Toshiki
PATENT ASSIGNEE(S):       Daiichi Kogyo Seiyaku Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 13 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     JP 2004067939      A2   20040304       JP 2002-231720   20020808
PRIORITY APPLN. INFO.:                   JP 2002-231720      20020808
AB   The emulsions, useful for cosmetics, agricultural chems., pharmaceuticals,
     etc., are prepared by phase conversion of water-in-oil emulsions containing
     fatty acids and/or higher alcs. and oil-insol. anionic or cationic
     macromols., by addition of aqueous phases.  The ionic macromols
```

. may be CM-cellulose Na salt or vinylpyrrolidone-N,N-dimethylaminoethyl methacrylate copolymer salts. Thus, a mixture of Na CM-cellulose, glycerin, and water was poured into an oil phase consisting of isostearic acid, glyceryl trioctanoate, fluidized paraffin, and di-Me polysiloxane to form a W/O emulsion, to which carboxyvinyl polymer, triethanolamine, and water was added to convert the emulsion into O/W emulsion with good storage stability.

IC ICM C08L101-02
ICS A61K007-00; C08J003-02; C08K005-05; C08K005-09; A23D007-00

CC 37-6 (Plastics Manufacture and Processing)

IT **Polyelectrolytes**
(**cationic**; preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)

IT 56-81-5, Glycerin, uses 102-71-6, Triethanolamine, uses 538-23-8, Glyceryl trioctanoate 2724-58-5, Isostearic acid 9003-04-7, Acrylic acid homopolymer sodium salt **9004-32-4**, Carboxymethyl cellulose sodium salt 53633-54-8
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)

IT **9004-32-4**, Carboxymethyl cellulose sodium salt
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(preparation of surfactant-free oil-in-water-in-oil emulsions having good storage stability)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

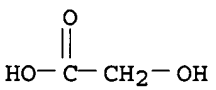
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



L39 ANSWER 2 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:13500 HCAPLUS
DOCUMENT NUMBER: 140:258892
TITLE: Dextran-spermine polycation: an efficient nonviral vector for in vitro and in vivo gene transfection
AUTHOR(S): Hosseinkhani, H.; Azzam, T.; Tabata, Y.; Domb, A. J.
CORPORATE SOURCE: Field of Tissue Engineering, Department of Biomaterials, Kyoto University, Kyoto, Japan

SOURCE: Gene Therapy (2004), 11(2), 194-203
CODEN: GETHEC; ISSN: 0969-7128
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Dextran-spermine cationic polysaccharide was prepared by means of reductive amination between oxidized dextran and the natural **oligoamine** spermine. The formed Schiff-base imine-based conjugate was reduced with borohydride to obtain the stable amine-based conjugate. The transfection efficiency of the synthetic dextran-spermine was assessed in vitro on HEK293 and NIH3T3 cell lines and found to be as high as the DOTAP/Chol 1/1 lipid-based transfection reagent. Modification of the dextran-spermine polycation with polyethylene glycol resulted in high transfection yield in serum-rich medium. I.m. injection in mice of dextran-spermine-pSV-LacZ complex induced high local gene expression compared to low expression of the naked DNA. I.v. injection of a dispersion of the dextran-spermine-pSV-LacZ complex resulted with no expression in all examined organs. When the partially PEGylated dextran-spermine-pSV-LacZ complex was i.v. applied, a high gene expression was detected mainly in the liver. Preliminary targeting studies indicated that the PEGylated dextran-spermine-pSV-LacZ complex bound to galactose receptor of liver parenchymal cells rather than the mannose receptor of liver nonparenchymal cells. This work offers a new biodegradable polycation based on natural components, which is capable of transfecting cells and tissues in vitro and in vivo.

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1, 3

IT 71-44-3DP, Spermine, conjugates with oxidized dextran and polyethylene glycol derivative **9004-54-0DP**, Dextran, conjugates with spermine and polyethylene glycol derivative 124661-64-9DP, reaction products with dextran-spermine conjugate
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(dextran-spermine polycation as efficient nonviral vector for in vitro and in vivo gene transfection)

IT **9004-54-0DP**, Dextran, conjugates with spermine and polyethylene glycol derivative
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(dextran-spermine polycation as efficient nonviral vector for in vitro and in vivo gene transfection)

RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 3 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:599036 HCAPLUS
DOCUMENT NUMBER: 139:208423
TITLE: Dextran-spermine conjugate: An efficient vector for gene delivery
AUTHOR(S): Azzam, T.; Eliyahu, H.; Makovitzki, A.; Domb, A. J.
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine, The Hebrew University of Jerusalem, Jerusalem, 91120, Israel
SOURCE: Macromolecular Symposia (2003), 195(2002 IUPAC World Polymer Congress), 247-261

CODEN: MSYMEC; ISSN: 1022-1360
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Cationic Polysaccharides based on **oligoamine**-dextran conjugates were synthesized and tested as vectors for gene transfection. Dextran with 40 kDa in average mol. weight was oxidized under mild conditions by potassium periodate to obtain the resp. polyaldehydes in relatively high yields (.apprx.90%). The oxidized dextran was reacted by reductive amination with various **oligoamines** of 2 to 4 amino groups to obtain the corresponding imine-conjugates. These water-soluble polymers were then reduced by excess of sodium borohydride to obtain the corresponding amine-conjugates in 30-40% overall yield. The electrostatic interactions of the representative polycations with plasmid DNA were evaluated as a function of charge ratio (+/-, polymer/DNA) and ionic strength of the medium applying the ethidium-bromide quenching assay. Although most synthetic polycations formed stable complexes with Plasmid DNAs, only the dextran-spermine conjugate of a defined amino content and mol. weight was able to transfect cells with high efficiency.
CC 3-1 (Biochemical Genetics)
IT 71-44-3D, Spermine, conjugates with oxidized dextran 124-20-9D, Spermidine, conjugates with oxidized dextran 4605-14-5D, N,N'-Bis-(3-aminopropyl)-1,3-propanediamine, conjugates with oxidized dextran **9004-54-0D**, Dextran, oxidized, conjugates with **oligoamines** 30734-81-7D, conjugates with oxidized dextran
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dextran-spermine conjugate as vector for gene delivery)
IT **9004-54-0D**, Dextran, oxidized, conjugates with **oligoamines**
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dextran-spermine conjugate as vector for gene delivery)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 4 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:32677 HCAPLUS
DOCUMENT NUMBER: 139:185510
TITLE: Polymeric vectors for gene therapy - synthesis and biological activity of polysaccharide based polycations
AUTHOR(S): Azzam, T.; Makovitzki, A.; Eliyahu, H.; Raskin, A.; Bernholz, Y.; Domb, A. J.; Linial, M.
CORPORATE SOURCE: Dep. of Med. Chem. and Natural Products, School of Pharm., Fac. of Med., The Hebrew Univ., Jerusalem, Israel
SOURCE: Zeszyty Naukowe Politechniki Slaskiej, Chemia (2001), 146, 15-22
CODEN: ZNSCAM; ISSN: 0372-9494
PUBLISHER: Wydawnictwo Politechniki Slaskiej
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Over 200 different polycations were prepared starting from various polysaccharides and **oligoamines**, mainly spermine and spermidine. Although, most of these conjugates formed stable complexes with various

plasmids as determined by turbidity expts., only a few polycations were found to be active in transfecting cells. This work indicates that the structure of the polycation has a significant role in the transfection activity.

CC 63-6 (Pharmaceuticals)

IT **Polysaccharides, biological studies**
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(complexes with polycations; synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

IT 71-44-3DP, Spermine, reaction products with polysaccharide 107-15-3DP, 1,2-Ethanediamine, reaction products with polysaccharide 111-40-0DP, Diethylene triamine, reaction products with polysaccharide 124-20-9DP, Spermidine, reaction products with polysaccharide 9002-98-6DP, reaction products with polysaccharide **9004-54-0DP**, Dextran, reaction products with polyamines **9036-66-2DP**, Arabinogalactan, reaction products with polyamines **9057-02-7DP**, Pullulan, reaction products with polyamines 26545-55-1DP, Propane diamine, reaction products with polysaccharide 30140-39-7DP, Hexane diamine, reaction products with polysaccharide 69468-17-3DP, Butane diamine, reaction products with polysaccharide 75413-84-2DP, Octane diamine, reaction products with polysaccharide 581776-15-0DP, reaction products with polysaccharide
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

IT **9004-54-0DP**, Dextran, reaction products with polyamines
9036-66-2DP, Arabinogalactan, reaction products with polyamines
9057-02-7DP, Pullulan, reaction products with polyamines
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(synthesis and transfection activity of polysaccharide based polycations as vectors for gene therapy)

RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 5 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:26050 HCAPLUS
DOCUMENT NUMBER: 139:219084
TITLE: In vitro cytotoxicity testing of polycations: influence of polymer structure on cell viability and hemolysis
AUTHOR(S): Fischer, Dagmar; Li, Youxin; Ahlemeyer, Barbara; Krieglstein, Josef; Kissel, Thomas
CORPORATE SOURCE: Department of Pharmaceutics and Biopharmacy, University of Marburg, Marburg, 35032, Germany

SOURCE: Biomaterials (2003), 24(7), 1121-1131
CODEN: BIMADU; ISSN: 0142-9612
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A comparative in vitro cytotoxicity study with different water-soluble, cationic **macromols**. which have been described as gene delivery systems was performed. Cytotoxicity in L929 mouse fibroblasts was monitored using the MTT assay and the release of the cytosolic enzyme lactate dehydrogenase (LDH). Microscopic observations were carried out as indicators for cell viability. Furthermore, hemolysis of erythrocytes was quantified spectrophotometrically. To determine the nature of cell death induced by the polycations, the nuclear morphol. after DAPI staining and the inhibition of the toxic effects by the caspase inhibitor zVAD.fmk were investigated. All assays yielded comparable results and allowed the following ranking of the polymers with regard to cytotoxicity: polyethylenimine = poly(L-lysine) > poly(diallyldimethylammonium chloride) > diethylaminoethyl dextran > poly(vinylpyridinium bromide) > Starburst dendrimer > cationized albumin > native albumin. The magnitude of the cytotoxic effects of all polymers were found to be time- and concentration dependent. The mol. weight as well as the cationic charge d. of the polycations were confirmed as key parameters for the interaction with the cell membranes and consequently, the cell damage. Evaluating the nature of cell death induced by poly(ethylenimine), we did not detect any indication for apoptosis suggesting that the polymer induced a necrotic cell reaction. Cell nuclei retained their size, chromatin was homogeneously distributed and cell membranes lost their integrity very rapidly at an early stage. Furthermore, the broad spectrum caspase inhibitor zVAD.fmk did not inhibit polyethylenimine-induced cell damage. Insights into the structure-toxicity relationship are necessary to optimize the cytotoxicity and biocompatibility of non-viral gene delivery systems.

CC 63-5 (Pharmaceuticals)

IT **Polyelectrolytes**
(**cationic**; polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

IT 124-09-4D, Hexamethylenediamine, reaction products with serum albumins 9002-98-6, Polyethylenimine **9015-73-0** 25104-18-1, Polylysine 26062-79-3, Poly(diallyldimethylammonium chloride) 32492-40-3, Pyridinium, 1-ethenyl-, bromide, homopolymer 38000-06-5, Polylysine
RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

IT **9015-73-0**
RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymer structure effect on cell viability and hemolysis in in vitro cytotoxicity testing of polycations)

RN 9015-73-0 HCAPLUS

CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O

$Et_2N-CH_2-CH_2-OH$

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 6 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:23345 HCAPLUS
DOCUMENT NUMBER: 138:78488
TITLE: Novel methods and compositions for delivering **macromolecules** to or via the respiratory tract
INVENTOR(S): Bot, Adrian I.; Dellamary, Luis A.; Smith, Dan J.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 19 pp., Cont.-in-part of U.S. Ser. No. 919,477.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003007930	A1	20030109	US 2002-132215	20020426
US 2002106368	A1	20020808	US 2001-919477	20010730

PRIORITY APPLN. INFO.: US 2000-221544P P 20000728
US 2001-286891P P 20010426
US 2001-919477 A2 20010730

AB Methods and compns. for delivering **macromols**. to or via the respiratory tract, such that the **macromols**. exhibit improved local and/or systemic bioavailability are provided. Such methods utilize lipid-based microstructures formed in combination with at least one bioactive **macromol**., which have a superior ability to rapidly release the bioactive **macromol**.(s) thereby resulting in improved local and/or systemic bioavailability of the bioactive **macromol**.(s). Such improved bioavailability is believed to be due, in part, to reduction of scavenging by bronchoalveolar macrophages and/or mucociliary clearance. Compns. with improved bioavailability are provided comprising a plurality of lipid-based microstructures formed in combination with at least one bioactive **macromol**., wherein the bioavailability of the bioactive **macromol**. is improved by modifying the rate of release of the bioactive **macromol**. from the microstructure thereby reducing scavenging by bronchoalveolar macrophages and/or mucociliary clearance. Construction of spray-dried metal/lipid-based microstructures were manufactured The final % weight composition of the microstructure was dipalmitoylphosphatidylcholine: CaCl2.2H2O:lactose:hIgG (48:12:15:25). The resulting powder comprised distinct, compact particles of geometric sizes in the range of 1-5 μm.

IC ICM A61L009-04
NCL 424045000
CC 63-6 (Pharmaceuticals)

ST **macromol** delivery respiratory tract hIgG

IT Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(-like mols.; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(G; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Alkanes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fluoro, hydro-; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Hydrocarbons, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fluoro; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Drug delivery systems
(liposomes; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Antibodies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(monoclonal; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Atomizing (spraying)
Detergents
Drug bioavailability
Micelles
Microstructure
Propellants (sprays and foams)
Respiratory tract
(novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Alcohols, biological studies
Antigens
Carbohydrates, biological studies
Ethers, biological studies
Gangliosides
Glycerophospholipids
Hydrocarbons, biological studies
Macromolecular compounds
Mucopolysaccharides, biological studies
Nucleotides, biological studies
Peptides, biological studies
Perfluorocarbons
Phosphatidylcholines, biological studies
Phosphatidylethanolamines, biological studies
Phosphatidylglycerols
Phosphatidylinositols
Phosphatidylserines
Polyoxyalkylenes, biological studies
Proteins
Sphingomyelins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT **Cations**
(**polyvalent**; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT Drug delivery systems
(powders, inhalants; novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT 50-70-4, Sorbitol, biological studies 50-99-7, Glucose, biological studies 57-50-1, Sucrose, biological studies 63-42-3, Lactose 69-65-8, Mannitol 69-79-4, Maltose 99-20-7, Trehalose 512-69-6, Raffinose 608-66-2, Galactitol **1398-61-4**, Chitin 2644-64-6, Dipalmitoyl phosphatidylcholine 2954-45-2 2954-49-6 3036-82-6, Dipalmitoyl phosphatidyl serine 3458-28-4, Mannose 4539-70-2, Distearoyl phosphatidyl choline **9000-69-5**, Pectins **9004-34-6**, Cellulose, biological studies **9004-53-9**, Dextrins **9004-54-0**, Dextrans, biological studies **9005-25-8**, Starch, biological studies **9005-27-0**, Hetastarch 9005-65-6, Tween 80 **9005-80-5**, Inulin **9007-28-7**, Chondroitin sulfate **9012-76-4**, Chitosan **9036-88-8**, Mannan 14127-61-8, Calcium ion, biological studies 18656-38-7, Dimyristoyl phosphatidylcholine 22537-22-0, Magnesium ion, biological studies 22537-23-1, Aluminum ion, biological studies 23713-49-7, Zinc ion, biological studies 25301-02-4, Tyloxapol 25322-68-3, Polyethylene glycol 36653-82-4, Cetyl alcohol 41017-85-0, Dioctanoyl phosphatidylcholine 53892-41-4 64044-51-5, Lactose monohydrate 106392-12-5, Poloxamer 188 481722-96-7
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(novel methods and compns. for delivering **macromols**. to or via respiratory tract)

IT **1398-61-4**, Chitin **9000-69-5**, Pectins **9004-34-6**, Cellulose, biological studies **9004-53-9**, Dextrins **9004-54-0**, Dextrans, biological studies **9005-25-8**, Starch, biological studies **9005-27-0**, Hetastarch **9005-80-5**, Inulin **9007-28-7**, Chondroitin sulfate **9012-76-4**, Chitosan **9036-88-8**, Mannan
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(novel methods and compns. for delivering **macromols**. to or via respiratory tract)

RN 1398-61-4 HCAPLUS
CN Chitin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9000-69-5 HCAPLUS
CN Pectin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-53-9 HCAPLUS
CN Dextrin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-25-8 HCAPLUS
CN Starch (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-27-0 HCAPLUS

CN Starch, 2-hydroxyethyl ether (8CI, 9CI) (CA INDEX NAME)

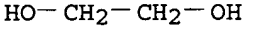
CM 1

CRN 9005-25-8
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 107-21-1
CMF C2 H6 O2



RN 9005-80-5 HCAPLUS
CN Inulin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9007-28-7 HCAPLUS
CN Chondroitin, hydrogen sulfate (9CI) (CA INDEX NAME)

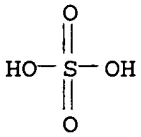
CM 1

CRN 9007-27-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 7664-93-9
CMF H2 O4 S



RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-88-8 HCAPLUS
CN D-Mannan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 7 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:914376 HCAPLUS
DOCUMENT NUMBER: 138:126864

TITLE: Cationic Polysaccharides for Gene Delivery
AUTHOR(S): Azzam, Tony; Raskin, Arthur; Makovitzki, Arik; Brem, Henry; Vierling, Pierre; Lineal, Michal; Domb, Abraham J.
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, School of Pharmacy-Faculty of Medicine, Hebrew University, Jerusalem, 91120, Israel
SOURCE: Macromolecules (2002), 35(27), 9947-9953
CODEN: MAMOBX; ISSN: 0024-9297 .
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cationic polysaccharides based on spermine-dextran conjugates were synthesized and tested as vectors for gene transfection. Dextrans of 10-380 kDa were oxidized under mild conditions by potassium periodate to obtain the resp. polyaldehydes in 90% overall yield. The oxidized dextrans were reacted by reductive amination with increasing amts. of spermine, and the efficacy of conjugation between the **oligoamine** and polysaccharides was studied as a function of spermine/aldehyde mole ratio, pH, and temperature of medium. The optimal conjugation yields were obtained at 1.25 mol ratio (spermine/aldehyde groups) and pH 11 at room temperature Under these conditions, .apprx.2 μmol/mg (spermine/polysaccharide) conjugation was achieved with 25-30% of the spermine moieties were conjugated in both sides to form branched polymers. The water-soluble polymers obtained were interacted with pCMV-GFP plasmid to form nanoparticles that were introduced to HEK293 and NIH3T3 cells in vitro for transfection efficacy assessment. Out of about 50 different polymer structures, only spermine-dextran of 6000-8000 Da, spermine content of .apprx.2 μmol/mg, and degree of branching of 25-30% was active in transfecting about 50% of the cells while all other polymers were significantly less active.

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 33

IT **Polysaccharides, biological studies**
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cationic polysaccharides for gene delivery)

IT 71-44-3, Spermine **9004-54-0**, Dextran, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cationic polysaccharides for gene delivery)

IT **9004-54-0**, Dextran, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cationic polysaccharides for gene delivery)

RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 8 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:638194 HCAPLUS
DOCUMENT NUMBER: 137:152017
TITLE: High throughput assay for monitoring **polycation** or polyanion molecular weight, degradation or synthesis
INVENTOR(S): Mayer, Raphael; Shemesh, Simha; Ayal-Hershkovitz, Maty
PATENT ASSIGNEE(S): Insight Strategy and Marketing Ltd., Israel
SOURCE: U.S. Pat. Appl. Publ., 27 pp.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002115071	A1	20020822	US 2001-753692	20010104
US 6630295	B2	20031007		

PRIORITY APPLN. INFO.: US 2001-753692 20010104

AB A method of testing an agent for its potential at modulating induction of a mol. weight change of a first polyion is disclosed. The method is effected by (a) subjecting the first polyion to conditions under-which the first polyion undergoing the mol. weight change in a presence, in an absence or under several different concns. of the agent; (b) interacting the first polyion with a second polyion having an opposite charge, the second polyion being fluorescently labeled; (c) providing reaction conditions so as to allow mol. weight discriminative interaction between the first polyion and the second polyion; and (d) employing a fluorescence polarization assay for determining a modulating effect of the agent on the induction of the mol. weight change of the first polyion.

IC ICM C12Q001-68
ICS G01N033-53; C12P021-06; C12P019-34
NCL 435006000
CC 9-5 (Biochemical Methods)
ST high throughput assay **polycation** polyanion mol wt degrdn
IT **Peptides, biological studies**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(connective tissue activating; high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)
IT Connective tissue
Molecular weight
Polarized fluorescence
Viscosity
pH
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)
IT Glycosaminoglycans, biological studies
Nucleic acids
Proteoglycans, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)
IT Enzymes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)
IT Anions
Cations
(polyvalent; high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)
IT **71-44-3**, Spermine 124-20-9, Spermidine 1398-61-4, Chitin **9004-34-6**, Cellulose, biological studies 9005-49-6, Heparin, biological studies 9050-30-0, Heparan sulfate **25104-18-1**, Poly lysine **25212-18-4**, Polyarginine **25513-46-6**,

Polyglutamic acid **25608-40-6**, Polyaspartic acid
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)

IT 9001-45-0, β Glucuronidase 9001-54-1, Hyaluronidase 9012-81-1, Chondroitinase 9025-39-2, Heparinase 52227-76-6, Heparitinase 71965-42-9, Glycosaminoglycan Sulfatase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)

IT **71-44-3**, Spermine **9004-34-6**, Cellulose, biological studies **25104-18-1**, Poly lysine **25212-18-4**, Polyarginine **25513-46-6**, Polyglutamic acid **25608-40-6**, Polyaspartic acid
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(high throughput assay for monitoring **polycation** or polyanion mol. weight, degradation or synthesis)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

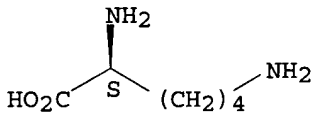
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

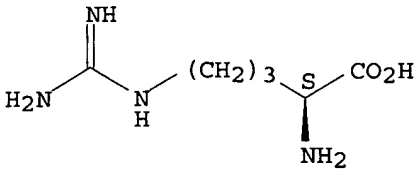


RN 25212-18-4 HCAPLUS
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.

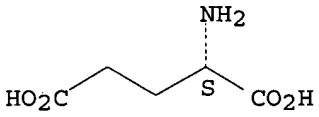


RN 25513-46-6 HCAPLUS
CN L-Glutamic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-86-0
CMF C5 H9 N O4

Absolute stereochemistry.

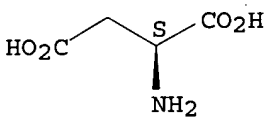


RN 25608-40-6 HCAPLUS
CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-84-8
CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).



L39 ANSWER 9 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:536420 HCAPLUS
DOCUMENT NUMBER: 137:99004
TITLE: Cationic polysaccharide compositions for gene transfer
INVENTOR(S): Domb, Abraham J.
PATENT ASSIGNEE(S): Polygene Ltd., Israel
SOURCE: Eur. Pat. Appl., 34 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1222926	A1	20020717	EP 2002-250178	20020110

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

US 2002146826 A1 20021010 US 2002-44538 20020110
PRIORITY APPLN. INFO.: IL 2001-140844 A 20010110

AB A **polycation** composition comprises (i) a polysaccharide chain having an amount of saccharide units ranging from 2 to 2000, (ii) at least one **oligoamine** directly grafted to said polysaccharide chain per each segment of 5 saccharide units, wherein said **oligoamine** is selected from the group consisting of a linear, branched and cyclic alkyl amine having at least two amino groups, and (iii) at least one further grafted group selected from the group consisting of a hydrophobic and an amphiphilic group directly grafted to said polysaccharide chain per each segment of 50 saccharide units, wherein said hydrophobic or amphiphilic group includes an aliphatic chain of at least 4 carbons atoms. For example, hydrophobized spermine-dextran **polycations** gave transfection values at 0.2 charge ratio (-/+). Hydrophobized **polycations** (10% or 20% fatty chain, mol/mol) gave the best transfection efficacy at 0.25 charge ratio (-/+). Hydrophobized **polycations** remarkably increase transfection, by at least 2 fold. However, the fatty acid side groups, stearate, octanoate, and myristate were less active than oleate derivs.

IC ICM A61K031-715
ICS C08L005-00; C08L005-02; C08B037-00; A61K048-00; A61K047-48

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1, 3, 33, 74

ST cationic polysaccharide conjugate prepn gene transfer; polysaccharide **oligoamine** hydrophobic amphiphilic polymer graft prepn

IT **Polysaccharides, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(acidic; cationic polysaccharide compns. for gene transfer)

IT **Antisense oligonucleotides**
Fatty acids, reactions
Ligands
Oligonucleotides
Peptides, reactions
Phospholipids, reactions
Polyamines
Polysaccharides, reactions
Proteins
RL: RCT (Reactant); RACT (Reactant or reagent)
(cationic polysaccharide compns. for gene transfer)

IT **Polysaccharides, biological studies**
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cationic; cationic polysaccharide compns. for gene transfer)

IT 57-88-5D, Cholesterol, derivs. **71-44-3**, Spermine 112-16-3, Lauroyl chloride 112-76-5, Stearoyl chloride 112-77-6, Oleoyl chloride 112-90-3, Oleylamine 528-50-7, Cellobiose 605-65-2, Dansyl chloride 687-64-9 6066-82-6, N-Hydroxysuccinimide 7144-08-3, Cholesteryl chloroformate 7693-46-1, p-Nitrophenyl chloroformate 9002-98-6 **9004-54-0**, Dextran, reactions **9004-61-9**, Hyaluronic acid 9004-74-4, MPEG **9005-32-7**, Alginic acid **9005-80-5**, Inulin **9012-76-4**, Chitosan **9036-66-2**, Arabinogalactan **9057-02-7**, Pullulan **114459-62-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(cationic polysaccharide compns. for gene transfer)

IT **71-44-3DP**, Spermine, reaction product with dextran dialdehyde 14464-30-3P 14464-32-5P 14565-47-0P 19728-66-6P, L-Lysine hydrazide 22102-92-7P 37317-99-0DP, Dextran dialdehyde, reaction product with spermine 37317-99-0P, Dextran dialdehyde 42014-50-6P 69888-86-4P 69888-88-6P 81480-40-2P 124661-64-9DP, reaction product with

dextran-spermine conjugates 124661-64-9P 159592-24-2P 359847-18-0P
442515-52-8P 442515-53-9P 442515-54-0P 442515-55-1P 442515-56-2P
442515-57-3P 442515-58-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(cationic polysaccharide compns. for gene transfer)

IT **71-44-3DP**, Spermine, reaction product with oxidized dextran
112-90-3DP, Oleylamine, reaction product with oxidized dextran
124-20-9DP, Spermidine, conjugates with chitosan **9004-61-9DP**,
Hyaluronic acid, polysaccharide conjugates **9005-49-6DP**, Heparin,
polysaccharide conjugates **9012-76-4DP**, Chitosan, conjugates with
oligoamines 9036-66-2DP, Arabinogalactan, reaction
products with polysaccharides 14464-30-3DP, reaction product with
dextran-spermine conjugates 14464-32-5DP, reaction product with
dextran-spermine conjugates 14565-47-0DP, reaction product with
dextran-spermine conjugates 22102-92-7DP, reaction product with
dextran-spermine conjugates 33008-06-9DP, Dansyl hydrazine, reaction
product with dextran-spermine conjugates 42014-50-6DP, reaction product
with dextran-spermine conjugates 69888-86-4DP, reaction product with
dextran-spermine conjugates 69888-88-6DP, reaction product with
dextran-spermine conjugates 81480-40-2DP, reaction product with
dextran-spermine conjugates 159592-24-2DP, reaction product with
dextran-spermine conjugates 359847-18-0DP, reaction product with
dextran-spermine conjugates 442515-53-9DP, reaction product with
dextran-spermine conjugates
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cationic polysaccharide compns. for gene transfer)

IT **71-44-3DP**, Spermine, quaternized or conjugates with chitosan
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(hydrophilic head group-containing; cationic polysaccharide compns. for gene transfer)

IT **71-44-3**, Spermine **9004-54-0**, Dextran, reactions
9004-61-9, Hyaluronic acid **9005-32-7**, Alginic acid
9005-80-5, Inulin **9012-76-4**, Chitosan **9036-66-2**
, Arabinogalactan **9057-02-7**, Pullulan **114459-62-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(cationic polysaccharide compns. for gene transfer)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-80-5 HCAPLUS

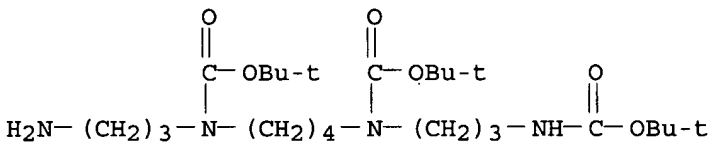
CN Inulin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

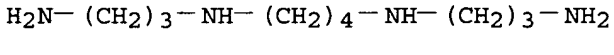
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 114459-62-0 HCAPLUS
CN 13-Oxa-2,6,11-triazapentadecanoic acid, 11-(3-aminopropyl)-6-[(1,1-dimethylethoxy)carbonyl]-14,14-dimethyl-12-oxo-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IT **71-44-3DP**, Spermine, reaction product with dextran dialdehyde
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(cationic polysaccharide compns. for gene transfer)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



IT **9004-61-9DP**, Hyaluronic acid, polysaccharide conjugates
9005-49-6DP, Heparin, polysaccharide conjugates
9012-76-4DP, Chitosan, conjugates with **oligoamines**
9036-66-2DP, Arabinogalactan, reaction products with polysaccharides
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cationic polysaccharide compns. for gene transfer)
RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-49-6 HCAPLUS
CN Heparin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **71-44-3DP**, Spermine, quaternized or conjugates with chitosan
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(hydrophilic head group-containing; cationic polysaccharide compns. for gene transfer)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 10 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:350566 HCAPLUS
DOCUMENT NUMBER: 138:112169
TITLE: Highly active polysaccharide based polycations for DNA cell transfection
AUTHOR(S): Azzam, T.; Makovitzki, A.; Eliyahu, H.; Raskin, A.; Linial, M.; Bernholz, Y.; Domb, A. J.
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, The Hebrew University, Jerusalem, 91120, Israel
SOURCE: Proceedings - 28th International Symposium on Controlled Release of Bioactive Materials and 4th Consumer & Diversified Products Conference, San Diego, CA, United States, June 23-27, 2001 (2001), Volume 2, 1187-1188. Controlled Release Society: Minneapolis, Minn.
CODEN: 69CNY8
DOCUMENT TYPE: Conference
LANGUAGE: English
AB A new class of polycations based on **oligoamine** conjugated on natural polysaccharides have been synthesized and tested for their activity as gene carriers. The transfection efficiency was evaluated in-vitro in a few cell types using several plasmid marker genes. From about 100 different conjugate derivs. only a few showed to be effective in gene transfection. The most effective polycation was spermine, a natural alkyl tetra-amine, grafted on dextran.
CC 63-5 (Pharmaceuticals)
IT DNA
Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(highly active polysaccharide based polycations for DNA cell transfection)
IT 71-44-3D, Spermine, conjugate with arabinogalactan, dextran or pullulan 124-20-9D, Spermidine, conjugate with dextran 9002-98-6D, conjugate with arabinogalactan or dextran **9004-54-0D**, Dextran, conjugate with spermine, polyethyleneimine, spermidine **9036-66-2D**, Arabinogalactan, conjugate with spermine or polyethyleneimine **9057-02-7D**, Pullulan, conjugate with spermine 26545-55-1, Propanediamine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(highly active polysaccharide based polycations for DNA cell transfection)
IT **9004-54-0D**, Dextran, conjugate with spermine, polyethyleneimine, spermidine **9036-66-2D**, Arabinogalactan, conjugate with spermine or polyethyleneimine **9057-02-7D**, Pullulan, conjugate with spermine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (highly active polysaccharide based polycations for DNA cell transfection)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 11 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:347052 HCAPLUS
DOCUMENT NUMBER: 138:78294
TITLE: Charged film capsules: local controlled release for the treatment of Helicobacter pylori infection and associated peptic ulcer disease
AUTHOR(S): Kemmerer, C. J.; Speaker, T. J.
CORPORATE SOURCE: School of Pharmacy, Temple University, Philadelphia, PA, 19140, USA
SOURCE: Proceedings - 28th International Symposium on Controlled Release of Bioactive Materials and 4th Consumer & Diversified Products Conference, San Diego, CA, United States, June 23-27, 2001 (2001), Volume 1, 680-681. Controlled Release Society: Minneapolis, Minn.
CODEN: 69CNY8
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Amoxicillin was captured efficiently in charged film capsules prepared from iota carrageenan and four different **oligoamines**. Its release was independent of ionic strength at gastric pH, but increasing ionic strength induced gelling which slowed release at pH 7.3.
CC 63-5 (Pharmaceuticals)
ST amoxicillin controlled release carrageenan **oligoamine**
IT Dissolution
Dissolution rate
(amoxicillin local controlled release from carrageenan/**oligoamine** capsules)
IT Drug delivery systems
(capsules, controlled-release; amoxicillin local controlled release from carrageenan/**oligoamine** capsules)
IT 71-44-3, Spermine 112-24-3, Triethylenetetramine 112-57-2, Tetraethylenepentamine 124-20-9, Spermidine **9062-07-1**, ι-Carrageenan 26787-78-0, Amoxicillin
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES

(Uses)
(amoxicillin local controlled release from carrageenan/ **oligoamine** capsules)

IT **9062-07-1**, ι-Carrageenan
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amoxicillin local controlled release from carrageenan/ **oligoamine** capsules)

RN 9062-07-1 HCAPLUS
CN ι-Carrageenan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 12 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:237763 HCAPLUS
DOCUMENT NUMBER: 137:10872
TITLE: Polysaccharide-**Oligoamine** Based Conjugates for Gene Delivery
AUTHOR(S): Azzam, Tony; Eliyahu, Hagit; Shapira, Libi; Linial, Michal; Barenholz, Yechezkel; Domb, Abraham J.
CORPORATE SOURCE: Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine, The Hebrew University, Jerusalem, 91120, Israel
SOURCE: Journal of Medicinal Chemistry (2002), 45(9), 1817-1824
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This work describes a versatile and universal **polycation** system based on **oligoamines** grafted on natural polysaccharides that is capable of complexing various plasmids and administering them into various cells in high yield to produce a desired protein. These **polycations** are expected to better meet the requirements for effective complexation and delivery of plasmid or an **antisense** and to **biodegrade** into nontoxic components at a controlled rate. The developed **biodegradable polycations** are based on spermine, a natural tetramine, conjugated to dextran or arabinogalactan. These **polycations** were prepared by reductive amination of oxidized polysaccharides with the desired **oligoamines**. The Schiff base conjugates thus obtained were reduced to the stable amine conjugates by sodium borohydride. Over 300 different **polycations** were prepared starting from various polysaccharides and **oligoamines**, mainly **oligoamines** of 2-4 amino groups. Although most of these conjugates formed stable complexes with various plasmids as determined by turbidity expts., only a few **polycations** were active in transfecting cells. Thus, the structure of the **polycation** plays a significant role in the transfection activity of **polycations**.

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 3, 33

ST polysaccharide **oligoamine** conjugate gene delivery prepn

IT Animal cell line
(3T3; polysaccharide-**oligoamine**-based conjugates for gene delivery)

IT Animal cell line
(EPC; polysaccharide-**oligoamine**-based conjugates for gene delivery)

IT Animal cell line
(Hek 293; polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT Polyamines
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(conjugates with dextran aldehyde; polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT Amines, biological studies
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(conjugates, with dextran aldehyde; polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT Drug delivery systems
Gene therapy
Human
Molecular weight distribution
Oxidation
Plasmid vectors
Transformation, genetic
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT **9004-54-0**, Dextran, reactions **9036-66-2**, Arabinogalactan
RL: RCT (Reactant); RACT (Reactant or reagent)
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT 37317-99-0DP, reaction product with oligamines, reduced 37317-99-0P, Dextran dialdehyde
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT **71-44-3DP**, Spermine, reaction product with dextran dialdehyde, reduced 107-15-3DP, 1,2-Ethanediamine, reaction product with dextran dialdehyde, reduced 109-76-2DP, 1,3-Propanediamine, reaction product with dextran dialdehyde, reduced 110-60-1DP, 1,4-Butanediamine, reaction product with dextran dialdehyde, reduced 110-70-3DP, reaction product with dextran dialdehyde, reduced 111-40-0DP, reaction product with dextran dialdehyde, reduced 124-09-4DP, 1,6-Hexanediamine, reaction product with dextran dialdehyde, reduced 124-20-9DP, Spermidine, reaction product with dextran dialdehyde, reduced 373-44-4DP, 1,8-Octanediamine, reaction product with dextran dialdehyde, reduced 929-59-9DP, reaction product with dextran dialdehyde, reduced **4605-14-5DP**, reaction product with dextran dialdehyde, reduced **4741-99-5DP**, reaction product with dextran dialdehyde, reduced 9002-98-6DP, Aziridine homopolymer, reaction products with dextran dialdehyde, reduced **9036-66-2DP**, Arabinogalactan, oxidized, reaction products with **oligoamines**, reduced **10563-26-5DP**, reaction product with dextran dialdehyde, reduced
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
IT **9004-54-0**, Dextran, reactions **9036-66-2**, Arabinogalactan
RL: RCT (Reactant); RACT (Reactant or reagent)
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **71-44-3DP**, Spermine, reaction product with dextran dialdehyde, reduced **4605-14-5DP**, reaction product with dextran dialdehyde, reduced **4741-99-5DP**, reaction product with dextran dialdehyde, reduced **9036-66-2DP**, Arabinogalactan, oxidized, reaction products with **oligoamines**, reduced **10563-26-5DP**, reaction product with dextran dialdehyde, reduced
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polysaccharide-**oligoamine**-based conjugates for gene delivery)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

RN 4605-14-5 HCAPLUS
CN 1,3-Propanediamine, N,N'-bis(3-aminopropyl)- (9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_3-NH-(CH_2)_3-NH_2$

RN 4741-99-5 HCAPLUS
CN 1,3-Propanediamine, N,N'-bis(2-aminoethyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-CH_2-CH_2-NH-(CH_2)_3-NH-CH_2-CH_2-NH_2$

RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 10563-26-5 HCAPLUS
CN 1,3-Propanediamine, N,N''-1,2-ethanediylbis- (9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-CH_2-CH_2-NH-(CH_2)_3-NH_2$

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 13 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:205868 HCAPLUS
DOCUMENT NUMBER: 136:371335
TITLE: Behavior of γ-ray-irradiated pullulan in aqueous solutions of cationic (cetyltrimethylammonium hydroxide) and anionic (sodium dodecyl sulfate) surfactants
AUTHOR(S): Shingel, K. I.; Petrov, P. T.

CORPORATE SOURCE: Scientific Pharmaceutical Centre, Belmedpreparaty Pharmaceutical Co., Minsk, 220001, Belarus
SOURCE: Colloid and Polymer Science (2002), 280(2), 176-182
CODEN: CPMSB6; ISSN: 0303-402X
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Gamma ray-irradiated pullulan (I) **macromols**. acquire properties of an anionic polyelectrolyte and, upon aggregation with the oppositely charged surfactant cetyltrimethylammonium hydroxide, are shown to precipitate according to their mol. weight This provides a convenient means for obtaining polymer fractions with a narrower mol.-weight distribution than those of the original samples. The method can be employed to obtain fractions of radiation-modified I required in the production of a blood-plasma substitute. Anionic properties of γ-ray-irradiated I also manifest themselves in interactions with Na dodecyl sulfate (II) in aqueous solution, which result in a significant change in the viscous behavior of I. Upon an increase in the concentration of γ-ray-irradiated I in a II solution, the decreased viscosity of I 1st increases and, upon reaching a certain concentration, C*, decreases. The C* values were shown to be dependent on the mol. weight of I. The phenomena observed are discussed in terms of the general theory of polymer solns., within which, C* is treated as a critical concentration at which interpenetration of polymer mols. becomes important. Unperturbed dimensions of γ-ray-irradiated I **macromols**. were estimated on the basis of exptl. viscosimetric data.
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 63
IT **Polyelectrolytes**
(anionic; gamma ray-irradiated pullulan fractionation with anionic vs. **cationic** surfactants for blood plasma substitutes)
IT **9057-02-7P**, Pullulan
RL: PNU (Preparation, unclassified); PREP (Preparation)
(gamma ray-irradiated; gamma ray-irradiated pullulan fractionation with anionic vs. cationic surfactants for blood plasma substitutes)
IT **9057-02-7P**, Pullulan
RL: PNU (Preparation, unclassified); PREP (Preparation)
(gamma ray-irradiated; gamma ray-irradiated pullulan fractionation with anionic vs. cationic surfactants for blood plasma substitutes)
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 14 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:184831 HCAPLUS
DOCUMENT NUMBER: 136:227908
TITLE: Compositions and methods for enhanced sensitivity and specificity of nucleic acid synthesis
INVENTOR(S): Astatke, Mekbib; Gebeyehu, Gulilat
PATENT ASSIGNEE(S): Invitrogen Corporation, USA
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002019822	A1	20020314	WO 2001-US28042	20010910
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001090660	A5	20020322	AU 2001-90660	20010910
US 2002037834	A1	20020328	US 2001-948714	20010910
EP 1343371	A1	20030917	EP 2001-970679	20010910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004508023	T2	20040318	JP 2002-524314	20010910

PRIORITY APPLN. INFO.: US 2000-231330P P 20000908
WO 2001-US28042 W 20010910

AB The present invention relates to cationic and **polycationic** compns. and methods for enhancing synthesis of nucleic acid mols. In a preferred aspect, the invention relates to inhibition or control of nucleic acid synthesis, sequencing or amplification. Specifically, the present invention discloses cationic and **polycationic** mols., compds., and compns. having affinity for double-stranded and/or single-stranded nucleic acid mols. and/or single-stranded/double-stranded nucleic acid complexes (e.g., primer/template complexes, double-stranded templates, single-stranded templates or single-stranded primers) for use in such enhanced synthesis. The cationic and **polycationic** mols., compds., and compns. of the invention are capable of inhibiting nonspecific nucleic acid synthesis at ambient temperature Thus, in a preferred aspect, the invention relates to "hot start" synthesis of nucleic acid mols. Accordingly, the invention prevent non-specific nucleic acid synthesis at low temps., for example during reaction set up. The invention also relates to kits for synthesizing, amplifying, reverse transcribing or sequencing nucleic acid mols. comprising one or more of the cationic and **polycationic** mols., compds., and compns. of the invention. The invention also relates to compns. prepared for carrying out the methods of the invention and to compns. made after or during such methods. The invention also generally relates to compns. useful for inhibiting or preventing degradation of various nucleic acid mols.

IC ICM A01N037-18

CC 3-1 (Biochemical Genetics)

ST nucleic acid synthesis amplification cation **polycation** kit

IT Lipids, biological studies
Proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cationic; compns. and methods for enhanced sensitivity and specificity of nucleic acid synthesis)

IT High-mobility group proteins
Histones
Protamines
Proteins
cDNA
mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(compns. and methods for enhanced sensitivity and specificity of

nucleic acid synthesis)
IT **71-44-3**, Spermine 124-20-9, Spermidine 2462-63-7, LIPOFECTACE
9015-73-0 25104-18-1, Polylysine 26062-48-6,
Polyhistidine 28728-55-4, Polybrene 124050-77-7, Transfectam
128835-92-7, Lipofectin 144189-73-1, DOTAP 158571-62-1, LIPOFECTAMINE
189203-04-1, CELLFECTIN 189203-05-2, DMRIE-C 213252-23-4, Superfect
214210-13-6, FUGENE 6 246856-21-3, Effectene 343308-74-7, GenePorter
344612-27-7, LIPOFECTAMINE 2000
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
ANST (Analytical study); BIOL (Biological study); USES (Uses)
(compns. and methods for enhanced sensitivity and specificity of
nucleic acid synthesis)
IT **71-44-3**, Spermine **9015-73-0 25104-18-1**,
Polylysine
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
ANST (Analytical study); BIOL (Biological study); USES (Uses)
(compns. and methods for enhanced sensitivity and specificity of
nucleic acid synthesis)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O

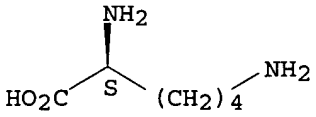
$Et_2N-CH_2-CH_2-OH$

RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 15 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:107189 HCAPLUS
DOCUMENT NUMBER: 136:172828
TITLE: Bioabsorbable composites of derivatized hyaluronic acid
INVENTOR(S): Sadozai, Khalid K.; Kuo, Jing-Wen; Sherwood, Charles H.
PATENT ASSIGNEE(S): Anika Therapeutics, Inc., USA
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002009792	A1	20020207	WO 2001-US40794	20010522
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002071855	A1	20020613	US 2001-863029	20010522
US 6548081	B2	20030415		
EP 1305064	A1	20030502	EP 2001-939935	20010522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2000-222116P P 20000728
WO 2001-US40794 W 20010522

OTHER SOURCE(S): MARPAT 136:172828

AB The present invention relates to a composite and a method for reducing post-operative adhesion of tissues. The composite includes a biocompatible, **biodegradable** support, and a water-insol. hyaluronic acid derivative at the support. The hyaluronic acid derivative includes an N-acylurea that results from crosslinking by the reaction of hyaluronic acid with a multifunctional carbodiimide. Optionally, a monocarbodiimide also may be employed. A pharmaceutically-active mol. may be added to the N-acylurea derivative of hyaluronic acid. Although the composite includes material that prevents adhesion between tissues, in order to reduce the need for suturing when the composite is being used during a surgical procedure, a material that enhances adhesion of the composite to tissues may be applied to a surface of the composite. A method of forming the composite for reducing post-operative adhesion of tissues, including the step of applying an N-acylurea derivative of hyaluronic acid resulting from crosslinking with a multifunctional carbodiimide, to a biocompatible, **biodegradable** support; a method of preparing a drug delivery vehicle that includes a pharmaceutically-active mol. with the N-acylurea derivative of hyaluronic acid resulting from crosslinking with a multifunctional carbodiimide; and a method of reducing post-operative adhesion of tissues are disclosed. A biscarbodiimide, p-phenylenebis(ethylcarbodiimide), and HA were reacted at a molar equiv

ratio of 16.7% to yield a water-insol. gel. This gel was poured into an 8 cm x 8 cm mold under aseptic conditions. The mold containing the crosslinked HA gel was frozen at -45° and then freeze-dried for 24 h under vacuum of <10 mm. The freeze-dried sponge was compressed under aseptic conditions and cut into 4 cm x 4 cm pieces. These sponges were put in sterile pouches and sealed to keep them sterile.

IC ICM A61L031-12
ICS A61L031-14; A61L031-10; A61K047-36; C08B037-00

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 33

IT Biopolymers
Caseins, biological studies
Collagens, biological studies
Enzymes, biological studies
Fibrins
Gelatins, biological studies
Growth factors, animal
Keratins
Myosins
Peptides, biological studies
Polyamides, biological studies
Polyethers, biological studies
Polyoxyalkylenes, biological studies
Polyphosphazenes
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bioabsorbable composites of derivatized hyaluronic acid

IT 144-62-7D, Oxalic acid, polymers containing 538-75-0D, reaction products with hyaluronic acid 2491-17-0D, reaction products with hyaluronic acid 9002-89-5, Poly(vinyl alcohol) 9003-01-4, Poly(acrylic acid) 9003-39-8, PVP **9004-34-6**, Cellulose, biological studies **9004-34-6D**, Cellulose, derivs. **9004-61-9D**, Hyaluronic acid, derivs. **9012-76-4**, Chitosan **9012-76-4D**, Chitosan, derivs. 22572-40-3D, reaction products with hyaluronic acid 24980-41-4, Polycaprolactone **24991-23-9** 25038-54-4, Nylon 6, biological studies 25248-42-4, Polycaprolactone 25322-68-3, Polyethylene glycol **25513-46-6**, Polyglutamic acid **25608-40-6**, Poly(L-aspartic acid) 25734-27-4, Nylon 2 25736-32-7, DL-Glutamic acid homopolymer, SRU 25952-53-8D, reaction products with hyaluronic acid 26009-03-0, Poly(glycolic acid) 26009-03-0D, Polyglycolide, derivs. 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26023-30-3D, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)], derivs. **26063-13-8**, Poly(L-aspartic acid) 26100-51-6, Poly(lactic acid) 26124-68-5, Poly(glycolic acid) 26202-08-4D, Polyglycolide, derivs. 26680-10-4D, Polylactide, derivs. 27881-01-2, Poly(D-aspartic acid) 27881-03-4, Poly(DL-aspartic acid) 27940-72-3, Poly(D-aspartic acid), SRU 27940-74-5, Poly(DL-aspartic acid), SRU 28728-97-4, Poly(hydroxybutyric acid), SRU 34346-01-5, Glycolic acid-lactic acid copolymer 49717-32-0, DL-Glutamic acid homopolymer 56549-52-1, Poly(butylene diglycolate) 90409-78-2, 1,3-Bis(p-carboxyphenoxy)propane-sebacic acid copolymer **99896-85-2D**, polymers containing 114959-05-6, Poly(4-hydroxybutyric acid) **134736-12-2D**, reaction products with hyaluronic acid 146878-66-2D, Polydihydropyran, derivs. **396077-51-3D**, reaction products with hyaluronic acid **396077-52-4D**, reaction products with hyaluronic acid **396077-53-5D**, reaction products with hyaluronic acid 396077-55-7D, reaction products with hyaluronic acid 396077-56-8D, reaction products with hyaluronic acid 396077-57-9D, reaction products with hyaluronic acid 396077-58-0D, reaction products with hyaluronic acid 396131-99-0D, reaction products with hyaluronic

acid
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bioabsorbable composites of derivatized hyaluronic acid)
IT **9005-32-7D**, Alginic acid, salts
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(crosslinked; bioabsorbable composites of derivatized hyaluronic acid)
IT **9004-34-6**, Cellulose, biological studies **9004-34-6D**,
Cellulose, derivs. **9004-61-9D**, Hyaluronic acid, derivs.
9012-76-4, Chitosan **9012-76-4D**, Chitosan, derivs.
24991-23-9 **25513-46-6**, Polyglutamic acid
25608-40-6, Poly(L-aspartic acid) **26063-13-8**,
Poly(L-aspartic acid) **99896-85-2D**, polymers containing
134736-12-2D, reaction products with hyaluronic acid
396077-51-3D, reaction products with hyaluronic acid
396077-52-4D, reaction products with hyaluronic acid
396077-53-5D, reaction products with hyaluronic acid
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bioabsorbable composites of derivatized hyaluronic acid)
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

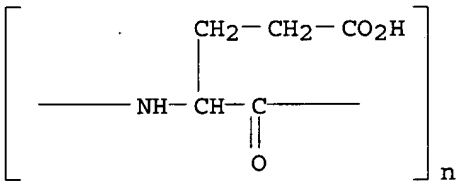
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 24991-23-9 HCAPLUS
CN Poly[imino[(1S)-1-(2-carboxyethyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

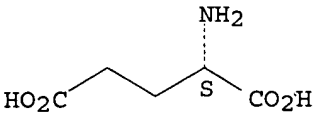


RN 25513-46-6 HCAPLUS
CN L-Glutamic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-86-0
CMF C5 H9 N O4

Absolute stereochemistry.

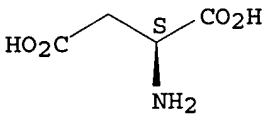


RN 25608-40-6 HCAPLUS
CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)

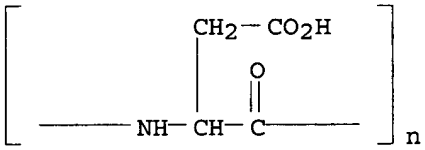
CM 1

CRN 56-84-8
CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).

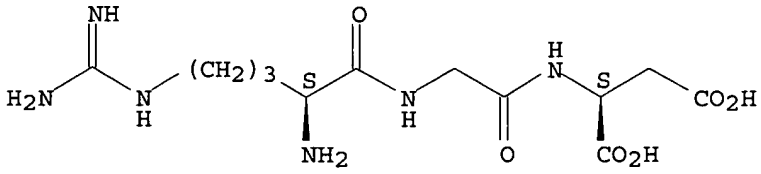


RN 26063-13-8 HCAPLUS
CN Poly[imino[(1S)-1-(carboxymethyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

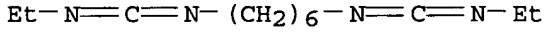


RN 99896-85-2 HCAPLUS
CN L-Aspartic acid, L-arginylglycyl- (9CI) (CA INDEX NAME)

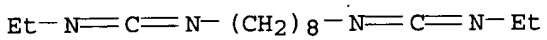
Absolute stereochemistry. Rotation (+).



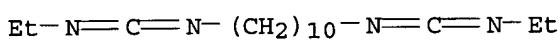
RN 134736-12-2 HCAPLUS
CN 1,6-Hexanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



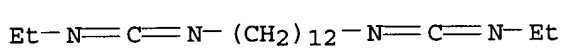
RN 396077-51-3 HCAPLUS
CN 1,8-Octanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



RN 396077-52-4 HCAPLUS
CN 1,10-Decanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



RN 396077-53-5 HCAPLUS
CN 1,12-Dodecanediamine, N,N'-bis(ethylcarbonimidoyl)- (9CI) (CA INDEX NAME)



IT **9005-32-7D**, Alginic acid, salts
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(crosslinked; bioabsorbable composites of derivatized hyaluronic acid)
RN 9005-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 16 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:444889 HCAPLUS
DOCUMENT NUMBER: 136:107410
TITLE: Microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant
AUTHOR(S): Sovilj, Verica J.; Dokic, Petar P.; Mesinkovska, Duska J.
CORPORATE SOURCE: Tehnoloski fak., Univ. u Novom Sadu, Novi Sad, 21000, Yugoslavia
SOURCE: Acta Periodica Technologica (2000), 31(Pt. B), 453-459
CODEN: APTEFF; ISSN: 1450-7188
PUBLISHER: University of Novi Sad, Faculty of Technology
DOCUMENT TYPE: Journal
LANGUAGE: Serbian
AB When a substance is dispersed in **macromol**. solution, which is a medium possessing ability for coacervation, the dispersed particles are surrounded by the coacervate layer which may lead to protecting layer formation, i.e. microcapsules formation. Coacervation method of microencapsulation is widely used in food and pharmaceutical industry. Polyelectrolyte and oppositely charged surfactant interaction in solution can form the coacervates. In this work, conditions for stable coacervate formation of anionic polyelectrolyte sodium CM-cellulose (NaKMC) and mixed micelles of cationic surfactant cetyltrimethylammonium bromide and nonionic surfactant polyoxyethylene sorbitan monooleate surfactant (PAM) in the presence of NaCl are examined Encapsulation of paraffin oil in this system was carried out. It has been shown that stable microcapsules were obtained in 1.2% NaCl at definite mass ratio of mixed micelle PAM/NaKMC. The composition and the micelle formation had the effect as well.
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 17

IT **Polyelectrolytes**
(anionic; microencapsulation by coacervation in the system anionic polyelectrolyte-**cationic** surfactant)
IT 57-09-0, Cetyltrimethylammonium bromide **9004-32-4**, Sodium CM-cellulose 9005-65-6, Polyoxyethylene sorbitan monooleate
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant)
IT **9004-32-4**, Sodium CM-cellulose
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(microencapsulation by coacervation in the system anionic polyelectrolyte-cationic surfactant)
RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

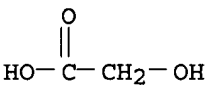
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



L39 ANSWER 17 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:111305 HCAPLUS
DOCUMENT NUMBER: 134:163843
TITLE: Polymerization of monomers having ethylenic double bonds while inhibiting scale formation
INVENTOR(S): Shimizu, Toshihide; Watanabe, Mikio; Fujimoto, Tatsuya; Noguki, Genji
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001040005	A2	20010213	JP 1999-215556	19990729

PRIORITY APPLN. INFO.: JP 1999-215556 19990729
AB The polymerization reactors have inner-wall coatings which are prepared by applying coatings containing water-soluble anionic **macromols**. and cationic organic compds. while using water vapor as carriers. Thus, an aqueous solution containing

100:30 (%) poly(acrylic acid)/polyethyleneimine mixture was applied on the inner wall of a polymerization reactor while introducing water vapor as coating carriers to give a thin coating which prevented scales from adhering to the reactor walls effectively in 50-batch polymns. of vinyl chloride monomers. The resulted polymers had little fisheyes.

IC ICM C08F002-00
ICS C08F014-06

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 42

IT **Polyelectrolytes**
(**cationic**, scale-preventive coatings; polymerization of ethylenic monomers in reactors with scale-preventive coatings prepared by use of water vapor carriers)

IT 157-07-3 989-38-8, C.I. Basic Red 1 4569-88-4, C.I. Basic Blue 16 8005-02-5, C.I. Solvent Black 7 **9000-69-5**, Pectin 9002-98-6 9003-01-4, Acrylic acid homopolymer 9003-05-8D, Polyacrylamide, partial Mannich reaction products 9003-47-8, Polyvinylpyridine **9004-32-4**, Carboxymethyl cellulose **9004-32-4**, Carboxymethyl cellulose **9004-61-9**, Hyaluronic acid 9011-07-8, Maleic anhydride-vinyl acetate copolymer **9012-76-4**, Chitosan 9032-43-3, Cellulose sulfate **11138-66-2**, Xanthan gum 25067-59-8, Poly(vinyl carbazole) 25087-26-7, Methacrylic acid homopolymer 25751-21-7, Acrylic acid-methacrylic acid copolymer 26336-38-9, Polyvinylamine 26426-80-2, Isobutylene-maleic anhydride copolymer 26837-42-3 27100-68-1, Maleic anhydride-vinyl ether copolymer 28574-59-6, Poly(dimethylaminoethyl acrylate) 30921-92-7, Poly(vinyl imidazoline) 35164-11-5, Acrylamide-vinylsulfonic acid copolymer 50851-57-5, Styrenesulfonic acid homopolymer 113755-30-9, Polygalactosamine 222540-65-0, Hepalin
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(scale-preventive coatings; polymerization of ethylenic monomers in reactors with scale-preventive coatings prepared by use of water vapor carriers)

IT **1398-61-4**, Chitin
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(water-soluble, scale-preventive coatings; polymerization of ethylenic monomers in reactors with scale-preventive coatings prepared by use of water vapor carriers)

IT **9000-69-5**, Pectin **9004-32-4**, Carboxymethyl cellulose **9004-61-9**, Hyaluronic acid **9012-76-4**, Chitosan **11138-66-2**, Xanthan gum
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(scale-preventive coatings; polymerization of ethylenic monomers in reactors with scale-preventive coatings prepared by use of water vapor carriers)

RN 9000-69-5 HCAPLUS
CN Pectin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

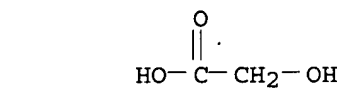
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 11138-66-2 HCAPLUS
CN Xanthan gum (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **1398-61-4**, Chitin
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(water-soluble, scale-preventive coatings; polymerization of ethylenic monomers
in reactors with scale-preventive coatings prepared by use of water vapor carriers)
RN 1398-61-4 HCAPLUS
CN Chitin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 18 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:78427 HCAPLUS
DOCUMENT NUMBER: 134:152626
TITLE: A **biodegradable polycation** composition for delivery of an anionic **macromolecule** in gene therapy
INVENTOR(S): Domb, Abraham J.
PATENT ASSIGNEE(S): Polygene Ltd., Israel
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001007486	A1	20010201	WO 2000-IL420	20000718

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1200481 A1 20020502 EP 2000-946249 20000718
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003505473 T2 20030212 JP 2001-512568 20000718

PRIORITY APPLN. INFO.: IL 1999-131074 A 19990723
WO 2000-IL420 W 20000718

AB The present invention provides a **biodegradable polycation** composition for delivery of an anionic **macromol**., comprising a polysaccharide chain having an amount of saccharide units ranging from 2 to 2000 and at least one grafted **oligoamine** per 5 saccharide units, wherein said **oligoamine** is selected from the group consisting of a linear, branched and cyclic alkyl amine having at least two amino groups, examples of said anionic **macromols**. are plasmid, an oligonucleotide, an **antisense**, a peptide, a protein, a polysaccharide and combinations thereof, and said polysaccharide chains are selected from the group consisting of dextrans, arabinogalactan, pullulan, cellulose, cellobiose, inulin, chitosan, alginates and hyaluronic acid.

IC ICM C08B037-00
ICS A61K047-36; A61K048-00

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 33, 44

ST gene therapy polysaccharide polyamine graft anionic **macromol** delivery; **biodegradable polycation** gene therapy anionic **macromol** delivery; **oligoamine** graft polysaccharide gene therapy **biodegradable polycation**; plasmid delivery gene therapy **biodegradable polycation** ; oligonucleotide delivery gene therapy **biodegradable polycation**; **antisense** delivery gene therapy **biodegradable polycation**; peptide delivery gene therapy **biodegradable polycation**; protein delivery gene therapy **biodegradable polycation**; dextran graft **biodegradable polycation** gene therapy; chitosan graft **biodegradable polycation** gene therapy; alginate graft **biodegradable polycation** gene therapy; hyaluronic acid graft **biodegradable polycation** gene therapy; arabinogalactan graft **biodegradable polycation** gene therapy; **polycation** gene therapy; pullulan graft **biodegradable polycation** gene therapy; cellobiose graft **biodegradable polycation** gene therapy; inulin graft **biodegradable polycation** gene therapy

IT **Biodegradable** materials
Gene therapy
(a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT **Polysaccharides, biological studies**
RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(conjugates; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT **Polysaccharides, biological studies**
RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(polyamine-grafted; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT **71-44-3DP**, Spermine, grafted products with oxidized polysaccharides 124-20-9DP, Spermidine, grafted products with oxidized polysaccharides 9002-98-6DP, grafted products with oxidized polysaccharides **9004-54-0DP**, Dextran, oxidized, **oligoamine** grafted products, biological studies **9036-66-2DP**, Arabinogalactan, oxidized, **oligoamine** grafted products **9057-02-7DP**, Pullulan, oxidized, **oligoamine** grafted products 103493-12-5DP, conjugation products with tosylated polysaccharides **168788-09-8DP**, conjugation products with tosylated polysaccharides **202145-88-8DP**, conjugation products with tosylated polysaccharides 322728-31-4DP, grafted products with **oligoamine** and Spermine
RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT 104-15-4, p-Toluenesulfonic acid, uses
RL: MOA (Modifier or additive use); USES (Uses)
(linking agent; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

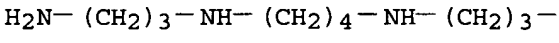
IT 288-32-4, Imidazole, reactions 383-63-1, Ethyl trifluoroacetate 501-53-1, Benzyl chloroformate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for terminating agent; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT **71-44-3**, Spermine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT 22129-07-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(terminating agent; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

IT **71-44-3DP**, Spermine, grafted products with oxidized polysaccharides **9004-54-0DP**, Dextran, oxidized, **oligoamine** grafted products, biological studies **9036-66-2DP**, Arabinogalactan, oxidized, **oligoamine** grafted products **9057-02-7DP**, Pullulan, oxidized, **oligoamine** grafted products **168788-09-8DP**, conjugation products with tosylated polysaccharides **202145-88-8DP**, conjugation products with tosylated polysaccharides
RL: IMF (Industrial manufacture); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

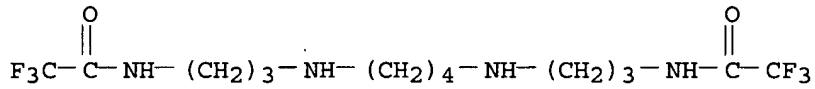


RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

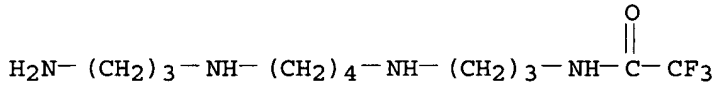
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9036-66-2 HCAPLUS
CN D-Galacto-L-arabinan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9057-02-7 HCAPLUS
CN Pullulan (9CI) (CA INDEX NAME)

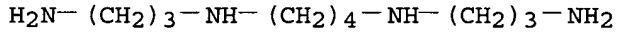
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 168788-09-8 HCAPLUS
CN Acetamide, N,N'-[1,4-butanediylbis(imino-3,1-propanediyl)]bis[2,2,2-trifluoro- (9CI) (CA INDEX NAME)



RN 202145-88-8 HCAPLUS
CN Acetamide, N-[3-[[4-[(3-aminopropyl)amino]butyl]amino]propyl]-2,2,2-trifluoro- (9CI) (CA INDEX NAME)



IT **71-44-3**, Spermine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; a **biodegradable polycation** composition for delivery of anionic **macromol**. in gene therapy)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 19 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:608645 HCAPLUS
DOCUMENT NUMBER: 133:205059
TITLE: Positively charged microporous membrane
INVENTOR(S): Wu, Xiaosong; Hou, Chung-Jen; Dharia, Jayesh; Konstantin, Peter; Yang, Yujing
PATENT ASSIGNEE(S): Pall Corporation, USA
SOURCE: PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2000050161 A1 20000831 WO 2000-US4786 20000225
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1163045 A1 20011219 EP 2000-915864 20000225
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
JP 2002537106 T2 20021105 JP 2000-600766 20000225
PRIORITY APPLN. INFO.: US 1999-121669P P 19990225
US 1999-121670P P 19990225
WO 2000-US4786 W 20000225

AB The present invention provides a pos. charged microporous membrane having a protein binding capacity of about 25 mg/mL or greater comprising a hydrophilic porous substrate and a crosslinked coating that provides a fixed pos. charge to the membrane. The present invention further provides a pos. charged microporous membrane comprising porous substrate and a crosslinked coating comprising pendent cationic groups. The membranes of the present invention find use in a variety of applications including ion-exchange chromatog., **macromol**. transfer, as well as detection, filtration and purification of biomols. such as proteins, nucleic acids, endotoxins, and the like. A diallylamine copolymer was prepared, activated with epichlorohydrin and crosslinked with pentaethylenehexaine and glycidyl trimethylammonium chloride on microporous polyethersulfone membranes. The membranes bound bovine serum albumin.

IC ICM B01D067-00
ICS B01D061-14; B01D071-56
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 3, 4, 35, 48

IT Immunoglobulins
Proteins, general, analysis
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process)
(binding capacity for; pos. charged microporous membrane)

IT Amino acids, preparation
Peptides, preparation
Proteins, specific or class
RL: PUR (Purification or recovery); PREP (Preparation)
(neg.-charged; pos. charged microporous membrane)

IT Transfers
(of **macromols**.; pos. charged microporous membrane)

IT **Macromolecular** compounds
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(transfer of; pos. charged microporous membrane)

IT 124-02-7D, Diallylamine, copolymers, crosslinked **4067-16-7D**, Pentaethylenehexamine, acrylic copolymers, crosslinked 9002-98-6D, crosslinked
RL: DEV (Device component use); USES (Uses)
(as coating; pos. charged microporous membrane)

IT 9003-53-6D, Polystyrene, compds. **9004-34-6D**, Cellulose, polymers, uses **9004-35-7D**, Cellulose acetate, compds. **9004-70-0D**, Cellulose nitrate, compds.

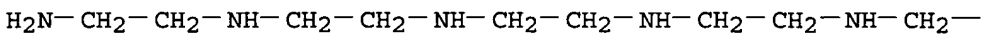
RL: DEV (Device component use); USES (Uses)
(as porous substrate; pos. charged microporous membrane)

IT 106-89-8DP, Epichlorohydrin, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with (3-chloro-2-hydroxypropyl) trimethylammonium chloride and aziridine homopolymer (polyethylenimine) 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with polyethylenimine and glycidyl trimethylammonium chloride 3033-77-0DP, Glycidyltrimethylammonium chloride, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, Glycidyl trimethylammonium chloride, reacton product with polyethylenimine and butylene glycol diglycidyl ether 3327-22-8DP, (3-Chloro-2-hydroxypropyl) trimethylammonium chloride, reaction product with ethylene glycol diglycidyl ether and aziridine homopolymer (polyethylenimine) **4067-16-7DP**, Pentaethylenehexamine, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer 9002-98-6DP, Aziridine, homopolymer, reaction product with (3-chloro-2-hydroxypropyl) trimethylammonium chloride and ethylene glycol diglycidyl ether 9002-98-6DP, Aziridine, homopolymer, reacton product with glycidyl trimethylammonium chloride and butylene glycol diglycidyl ether 28065-38-5DP, Butylene glycol diglycidyl ether, reaction product with polyethylenimine and glycidyl trimethylammonium chloride 28065-38-5DP, Butylene glycol diglycidyl ether, reacton product with polyethylenimine and glycidyl trimethylammonium chloride 105689-90-5DP, reaction product with ethylene glycol diglycidyl ether
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(pos. charged microporous membrane)

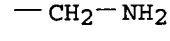
IT 2224-15-9DP, Ethylene glycol diglycidyl ether, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 3033-77-0DP, reaction product with glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer **4067-16-7DP**, Pentaethylenehexamine, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer **4067-16-7DP**, Pentaethylenehexamine, reaction product with glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer 9002-98-6DP, Aziridine, homopolymer, reaction product with diallylamine-diallyldimethylammonium chloride-3-methacryloylaminopropyltrimethylammonium chloride copolymer 290307-86-7DP, Diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer, reaction product with epichlorohydrin 290307-87-8DP, reaction product with epichlorohydrin 290307-88-9P 290307-89-0P, Glycidyl methacrylate-dimethylformamide-methacryloyloxyethyl trimethylammonium chloride copolymer 290307-90-3P, Glycidyl methacrylate-methacryloylaminopropyl trimethylammonium chloride-pentaethylenehexamine-glycidyl trimethylammonium chloride copolymer
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(pos. charged microporous membrane)

IT **4067-16-7D**, Pentaethylenehexamine, acrylic copolymers, crosslinked
RL: DEV (Device component use); USES (Uses)
(as coating; pos. charged microporous membrane)
RN 4067-16-7 HCAPLUS
CN 3,6,9,12-Tetraazatetradecane-1,14-diamine (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IT **9004-34-6D**, Cellulose, polymers, uses **9004-35-7D**, Cellulose acetate, compds. **9004-70-0D**, Cellulose nitrate, compds.
RL: DEV (Device component use); USES (Uses)
(as porous substrate; pos. charged microporous membrane)
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-35-7 HCAPLUS
CN Cellulose, acetate (9CI) (CA INDEX NAME)

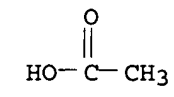
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



RN 9004-70-0 HCAPLUS
CN Cellulose, nitrate (9CI) (CA INDEX NAME)

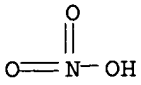
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

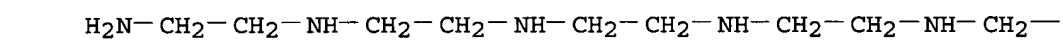
CM 2

CRN 7697-37-2
CMF H N O3

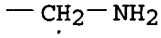


IT **4067-16-7DP**, Pentaethylenehexamine, reaction product with diallylamine-diallyldimethylammonium chloride-N-[3-(dimethylamino)propyl]methacrylamide-3-methacryloylaminopropyltrimethylammonium chloride copolymer
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(pos. charged microporous membrane)
RN 4067-16-7 HCAPLUS
CN 3,6,9,12-Tetraazatetradecane-1,14-diamine (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(pos. charged microporous membrane
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 20 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:513547 HCAPLUS
DOCUMENT NUMBER: 133:125280
TITLE: Compositions and methods for controlled delivery of virus vectors
INVENTOR(S): Levy, Robert J.; Jones, Peter L.
PATENT ASSIGNEE(S): Children's Hospital of Philadelphia, USA
SOURCE: PCT Int. Appl., 87 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000043044	A1	20000727	WO 2000-US1193	20000119

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,

IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-116405P P 19990119

AB The invention relates to compns. and methods for delivering a virus vector to an animal. The compns. include compns. which comprise a matrix having a virus vector bound at the exterior surface thereof in a physiol. reversible manner. The invention also includes methods of making such compns., including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such compns. Methods of delivering a virus vector to an animal tissue are also described.

IC ICM A61K048-00
ICS C12N015-63; A61B019-00; C07H021-04

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 3

IT Matrix media
(**biodegradable**; compns. and methods for controlled delivery of virus vectors)

IT **Proteins, specific or class**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(coat; compns. and methods for controlled delivery of virus vectors)

IT **Peptides, biological studies**
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(oligopeptides, virus-binding α-helical; compns. and methods for controlled delivery of virus vectors)

IT **Antisense oligonucleotides**
Ribozymes
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(transfection indicators; compns. and methods for controlled delivery of virus vectors)

IT **Proteins, specific or class**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(virus-binding; compns. and methods for controlled delivery of virus vectors)

IT **Glycopeptides**
Histones
Myelin basic protein
Polyamides, biological studies
Prolamins
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(virus-binding; compns. and methods for controlled delivery of virus vectors)

IT 97-90-5, Ethylene glycol dimethacrylate 108-05-4D, Vinyl acetate, copolymers 1306-06-5, Hydroxyapatite 6606-65-1 7440-06-4, Platinum, biological studies 7440-32-6, Titanium, biological studies 7758-87-4, Tricalcium phosphate 9002-84-0, Polytetrafluoroethylene 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-18-3 9003-20-7, Vinyl acetate homopolymer

9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene 9003-39-8, Polyvinylpyrrolidone 9003-53-6, Polystyrene 9003-54-7, PolyStyrene acrylonitrile 9003-56-9 **9004-35-7**, Cellulose acetate 9004-53-9, Dextrin **9004-54-0**, Dextran, biological studies **9005-32-7**, Alginic acid 9011-14-7, Polymethylmethacrylate 9012-36-6, Agarose 9016-80-2, Polymethylpentene 9017-21-4, Polymethylstyrene 9046-31-5, Polystyrene carboxylic acid 10586-17-1, Isopropyl cyanoacrylate 12597-68-1, Stainless steel, biological studies 15802-18-3D, polyalkyl derivs. 21982-30-9, Hydroxymethyl methacrylate 24937-78-8, Ethylene vinyl acetate copolymer 24980-41-4, Polycaprolactone 24981-14-4, Polyvinyl fluoride 25014-41-9, Polyacrylonitrile 25068-26-2, Polymethylpentene 25087-26-7, Polymethacrylic acid 25102-52-7, Butadiene-isoprene copolymer 25248-42-4, Polycaprolactone 26009-03-0, Polyglycolic acid 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Polylactic acid 26124-68-5, Polyglycolic acid 34346-01-5, Glycolic acid-lactic acid copolymer 50851-57-5, Polystyrene sulfonic acid 61128-18-5, Caprolactone glycolic acid copolymer
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(controlled-delivery matrix; compns. and methods for controlled delivery of virus vectors)

IT **71-44-3**, Spermine 100-97-0, Hexamine, biological studies 110-60-1, Putrescine 124-20-9, Spermidine 462-94-2, Cadaverine 9002-98-6, Polyethylenimine **24937-47-1**, Polyarginine 24937-49-3, Polyornithine 25104-12-5, Polyornithine **25104-18-1**, Polylysine **25212-18-4**, Polyarginine 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine 26913-06-4, Polyethylenimine 28728-55-4, Polybrene **38000-06-5**, Polylysine
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(virus-binding; compns. and methods for controlled delivery of virus vectors)

IT **9004-35-7**, Cellulose acetate **9004-54-0**, Dextran, biological studies **9005-32-7**, Alginic acid
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(controlled-delivery matrix; compns. and methods for controlled delivery of virus vectors)

RN 9004-35-7 HCAPLUS
CN Cellulose, acetate (9CI) (CA INDEX NAME)

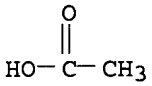
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2

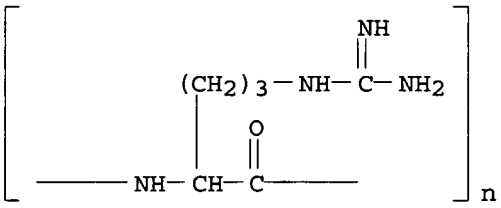


RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **71-44-3**, Spermine **24937-47-1**, Polyarginine
25104-18-1, Polylysine **25212-18-4**, Polyarginine
38000-06-5, Polylysine
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(virus-binding; compns. and methods for controlled delivery of virus vectors)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

RN 24937-47-1 HCAPLUS
CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

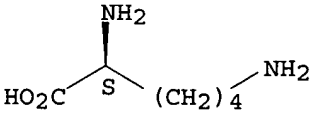


RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



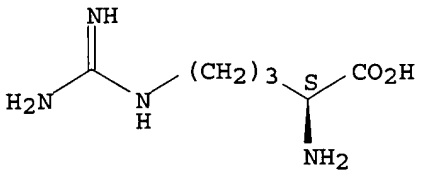
RN 25212-18-4 HCAPLUS

CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

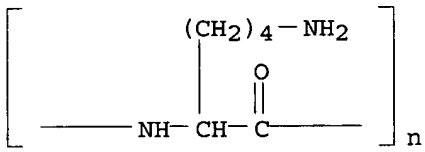
CM 1

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 21 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:493425 HCAPLUS
DOCUMENT NUMBER: 133:109939
TITLE: Hydrogel compositions for controlled delivery of virus vectors and methods of use thereof
INVENTOR(S): Levy, Robert J.; Crombleholme, Timothy; Vyavahare, Narendra
PATENT ASSIGNEE(S): The Children's Hospital of Philadelphia, USA
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000041732	A1	20000720	WO 2000-US1194	20000119

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6333194 B1 20011225 US 2000-487854 20000119
PRIORITY APPLN. INFO.: US 1999-116538P P 19990119

AB The invention relates to compns. and methods for delivering a virus vector to an animal. The compns. include compns. which comprise a hydrogel matrix (e.g. a collagen matrix which can comprise a poloxamer or an alginate) containing a virus vector therein in a transfectious form. The invention also includes methods of making such hydrogel precursor mixts. and hydrogel matrixes, including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such mixts. or matrixes. The invention further relates to compns. comprising a hydrogel precursor mixture having a virus vector suspended therein, which, when administered to an animal, gel to form a hydrogel matrix containing a virus vector therein in a transfectious form. Methods of delivering a virus vector to an animal tissue are also described.

IC ICM A61K051-00
ICS A61M036-14; C07H021-02; C07H021-04; C12Q001-68; C12P021-06; C12N015-00

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 3, 15

IT **Proteins, specific or class**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(-ligand pairs; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **Antisense oligonucleotides**
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(antirestenotic; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT Polymers, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(**biodegradable**; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **Glycopeptides**
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(low-mol.-weight; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **Peptides, biological studies**
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(oligopeptides, α-helical; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **Proteins, specific or class**
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(viral coat; hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **71-44-3**, Spermine 100-97-0, Hexamine, biological studies
110-60-1, Putrescine 124-20-9, Spermidine 462-94-2, Cadaverine
9002-98-6, Polyethylenimine 26913-06-4, Polyethylenimine 28728-55-4, Polybrene
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

IT **9005-32-7D**, Alginic acid, derivs. **24937-47-1**,
Polyarginine 24937-49-3, Polyornithine 25104-12-5, Polyornithine

25104-18-1, Polylysine **25212-18-4**, Polyarginine
26062-48-6, Polyhistidine 26854-81-9, Polyhistidine **38000-06-5**
, Polylysine 106392-12-5, Poloxamer
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

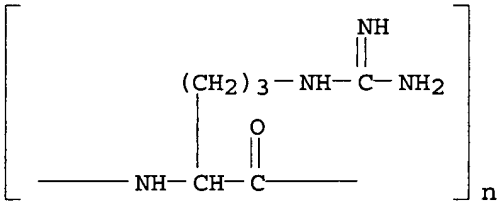
IT **71-44-3**, Spermine
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

IT **9005-32-7D**, Alginic acid, derivs. **24937-47-1**,
Polyarginine **25104-18-1**, Polylysine **25212-18-4**,
Polyarginine **38000-06-5**, Polylysine
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hydrogel compns. for controlled delivery of virus vectors and methods of use thereof)

RN 9005-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 24937-47-1 HCAPLUS
CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

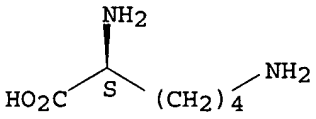


RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

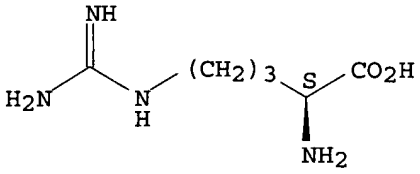


RN 25212-18-4 HCAPLUS
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

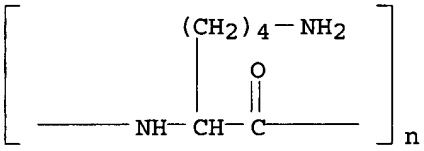
CM 1

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 22 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:493334 HCAPLUS
DOCUMENT NUMBER: 133:125276
TITLE: Sustained delivery of polyionic bioactive agents
INVENTOR(S): Levy, Robert J.
PATENT ASSIGNEE(S): The Children's Hospital of Philadelphia, USA
SOURCE: PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000041647	A1	20000720	WO 2000-US1317	20000119
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6395029	B1	20020528	US 1999-234011	19990119

PRIORITY APPLN. INFO.: US 1999-234011 A 19990119

AB The invention relates to compns. and methods for delivering a polyionic bioactive composition such as a nucleic acid to a tissue of an animal. The compns. of the invention include compns. which comprise a matrix comprising the polyionic bioactive agent and wherein at least most of the polyionic bioactive agent at the exterior portion of the matrix is present in a condensed form. The invention also includes methods of making such compns., including particles, devices, bulk materials, and other objects which comprise, consist of, or are coated with such compns. Methods of delivering a polyionic bioactive agent to an animal tissue are also described. The invention further includes a method of storing a nucleic acid.

IC ICM A61F002-02
ICS A61F002-06; A61F013-00; A61K009-14; A61K009-16; A61K009-127; A61K047-00; A61K047-48

CC 63-5 (Pharmaceuticals)

IT Polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**biodegradable**; sustained delivery of nucleic acids and other polyionic bioactive agents)

IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(c-myb, **antisense** oligonucleotides for; sustained delivery of nucleic acids and other polyionic bioactive agents)

IT Gene, animal
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(c-myc, **antisense** oligonucleotides for; sustained delivery of nucleic acids and other polyionic bioactive agents)

IT **Glycopeptides**
Myelin basic protein
Prolamins
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(condensing agent; sustained delivery of nucleic acids and other polyionic bioactive agents)

IT **Antisense oligonucleotides**
Bone morphogenetic proteins
Cocoa butter
DNA
Ethylene-propylene rubber
Fluoropolymers, biological studies
Neoprene rubber, biological studies
Nitrile rubber, biological studies
Platelet-derived growth factors
Polyamides, biological studies
Polyanhydrides
Polycarbonates, biological studies
Polyesters, biological studies
Polyimides, biological studies
Polyoxyalkylenes, biological studies
Polysulfones, biological studies
Polyurethanes, biological studies
RNA
Rayon, biological studies
Ribozymes
Silicone rubber, biological studies
Stem cell factor
Waxes

cDNA
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sustained delivery of nucleic acids and other polyionic bioactive agents)

IT 100-97-0, Hexamine, biological studies 110-60-1, Putrescine 462-94-2, Cadaverine 9002-98-6 14127-61-8, Calcium ion, biological studies 16096-89-2, biological studies 18459-37-5, Cesium ion, biological studies 22537-22-0, Magnesium ion, biological studies 22537-23-1, Aluminum ion, biological studies 22541-12-4, Barium ion, biological studies 22541-63-5, Cobalt ion (Co3+), biological studies **24937-47-1**, Polyarginine 24937-49-3, Polyornithine 25104-12-5, Polyornithine **25104-18-1**, Polylysine **25212-18-4**, Polyarginine 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine 28728-55-4, Polybrene **38000-06-5**, Polylysine
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(condensing agent; sustained delivery of nucleic acids and other polyionic bioactive agents)

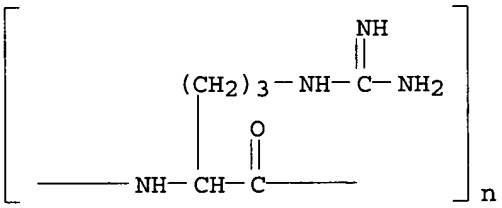
IT **71-44-3**, Spermine 124-20-9, Spermidine
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sustained delivery of nucleic acids and other polyionic bioactive agents)

IT 97-90-5, Ethylene glycol dimethacrylate 1306-06-5, Hydroxyapatite 6606-65-1 7440-06-4, Platinum, biological studies 7440-32-6, Titanium, biological studies 7758-87-4, Tricalcium phosphate 9002-06-6, Thymidine kinase 9002-64-6, Pth 9002-72-6, Growth hormone 9002-84-0, Polytetrafluoroethylene 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-18-3, Acrylonitrile butadiene copolymer 9003-20-7, Polyvinylacetate 9003-27-4, Polyisobutylene 9003-31-0, Polyisoprene 9003-39-8, Polyvinylpyrrolidone 9003-42-3, Polyethylmethacrylate 9003-53-6, Polystyrene 9003-56-9, Acrylonitrile butadiene styrene copolymer **9004-35-7**, Cellulose acetate 9004-53-9, Dextrin **9004-54-0**, Dextran, biological studies **9005-32-7**, Alginic acid 9011-14-7, Polymethylmethacrylate 9012-36-6, Agarose 9016-80-2, Polymethylpentene 9017-21-4, Polymethylstyrene 9046-31-5, Polystyrene carboxylic acid 10586-17-1, Isopropyl cyanoacrylate 12597-68-1, Stainless steel, biological studies 15802-18-3D, Cyanoacrylic acid, polyalkyl derivs. 21982-30-9, Hydroxymethyl methac rylate 24937-78-8, Ethylene vinyl acetate copolymer 24980-41-4, Polycaprolactone 24981-14-4, Polyvinyl fluoride 25068-26-2, Polymethylpentene 25087-26-7, Polymethacrylic acid 25102-52-7, Butadiene-isoprene copolymer 25248-42-4, Polycaprolactone 26009-03-0, Polyglycolic acid 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26100-51-6, Polylactic acid 26124-68-5, Polyglycolic acid 50851-57-5, Polystyrene sulfonic acid 61128-18-5, Caprolactone-glycolic acid copolymer 61912-98-9, Insulin-like growth factor 62031-54-3, Fgf 80137-67-3, Caprolactone-lactic acid copolymer 139639-23-9, Tissue plasminogen activator
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sustained delivery of nucleic acids and other polyionic bioactive agents)

IT **24937-47-1**, Polyarginine **25104-18-1**, Polylysine

25212-18-4, Polyarginine **38000-06-5**, Polylysine
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(condensing agent; sustained delivery of nucleic acids and other polyionic bioactive agents)

RN 24937-47-1 HCAPLUS
CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

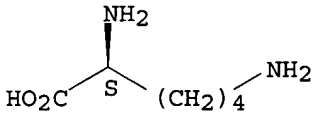


RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

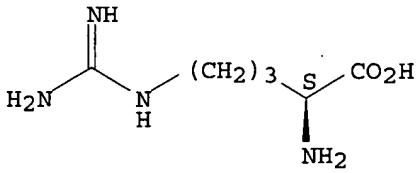


RN 25212-18-4 HCAPLUS
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

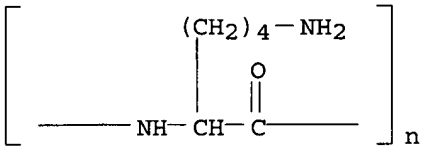
CM 1

CRN 74-79-3
CMF C6 H14 N4 O2

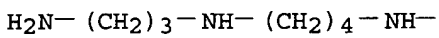
Absolute stereochemistry.



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT **71-44-3**, Spermine
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sustained delivery of nucleic acids and other polyionic bioactive agents)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



IT **9004-35-7**, Cellulose acetate **9004-54-0**, Dextran, biological studies **9005-32-7**, Alginic acid
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sustained delivery of nucleic acids and other polyionic bioactive agents)
RN 9004-35-7 HCAPLUS
CN Cellulose, acetate (9CI) (CA INDEX NAME)

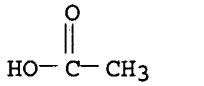
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-32-7 HCAPLUS
CN Alginic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 23 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:338414 HCAPLUS
DOCUMENT NUMBER: 133:161397
TITLE: Optical detection of polycations via polymer film-modified microtiter plates: response mechanism and bioanalytical applications
AUTHOR(S): Dai, Sheng; Ye, Qingshan; Wang, Enju; Meyerhoff, Mark E.
CORPORATE SOURCE: Department of Chemistry, The University of Michigan, Ann Arbor, MI, 48109-1055, USA
SOURCE: Analytical Chemistry (2000), 72(14), 3142-3149
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Microtiter plate wells modified with thin (.apprx.20 μm) polymeric films capable of optically sensing **macromol**. protamine and other polycationic species are described. The plates are prepared by coating the bottom of each well of a conventional 96-well polypropylene plate with an adherent polymer film (a mixture of poly(vinyl chloride) and polyurethane) containing a lipophilic 2',7'-dichlorofluorescein derivative Surprisingly, optical response toward polycations is shown to result from the extraction of the fluorescein derivative from the polymer film into a lyophobic colloidal phase at the sample/film interface. This new phase is likely composed of a micellular-type ion pair complex between the analyte polycation from aqueous sample phase and the deprotonated form of the fluorescein derivative Accumulation of the deprotonated fluorescein species in this interfacial region induces an absorbance change measured at 540 nm. Optimized plates can be used to sense protamine concns. in the range of 0-100 μg/mL in 10 min with little or no response to physiol. levels of common cationic species (Na+, K+, Ca2+, etc.). The modified plates are shown to be useful as simple optical detectors for measuring heparin levels in plasma via titrns. with protamine and for monitoring protease activities (trypsin and plasmin) that cleave polycationic peptides/proteins such as protamine into smaller peptide fragments that are not detected by the sensing films. Assays for "clot busting" plasminogen activators (streptokinase, urokinase, and tissue plasminogen activator) are also demonstrated using this relatively simple microtiter plate-based polycation detection system.

CC 9-1 (Biochemical Methods)
IT **Cations**
(**polyvalent**; optical detection of polycations via polymer film-modified microtiter plates in relation to response mechanism and bioanal. applications)
IT 9001-90-5, Plasmin 9002-01-1, Streptokinase 9002-07-7, Trypsin **9005-49-6**, Heparin, analysis 9039-53-6, Urokinase 105913-11-9, Plasminogen activator
RL: ANT (Analyte); ANST (Analytical study)
(optical detection of polycations via polymer film-modified microtiter plates in relation to response mechanism and bioanal. applications)
IT **9005-49-6**, Heparin, analysis
RL: ANT (Analyte); ANST (Analytical study)
(optical detection of polycations via polymer film-modified microtiter plates in relation to response mechanism and bioanal. applications)
RN 9005-49-6 HCAPLUS
CN Heparin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 24 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:307111 HCAPLUS
DOCUMENT NUMBER: 132:330579
TITLE: Nucleic acid detection using immobilized target-concentrating capture probes and target-specific probes
INVENTOR(S): Summerton, James E.; Weller, Dwight D.; Wages, John M., Jr.
PATENT ASSIGNEE(S): AVI BioPharma, Inc., USA
SOURCE: U.S., 24 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6060246	A	20000509	US 1997-969813	19971113

PRIORITY APPLN. INFO.: US 1996-30963P P 19961115

AB The invention relates to compns. and methods for rapidly detecting or isolating a target nucleic acid sequence in a polynucleotide-containing sample. The method uses probes immobilized upon a matrix (a rapid pairing reagent) in company with a non-selective polynucleotide-binding agent (a rapid capture component) that serves to concentrate the target sequences near the probes immobilized on the same matrix. The probes and the rapid capture component are linked to the solid substrate via a cleavable linkage, such as disulfide, vicinal diol, ortho-nitrobenzyl ester, ester, a peptide, or oligosaccharide. Selectively disrupting the binding between the capture component and polynucleotides leaves only target sequence bound to the rapid pairing reagent. The capture component is preferably either a polymeric amine or a poly-uracil or poly-thymine sequence containing polynucleotide for binding poly-A tail containing nucleic acids. The target-specific probe is either a polynucleotide or an analog such as morpholino oligomer or peptide nucleic acid. The method optionally comprises exposing the rapid pairing reagent to a detectable reporter group, preferably cationic. A method and reagent for solid-phase enzymic amplification of the captured analyte mol. is also claimed. A reagent was prepared by attaching **oligoamine** capture probe and morpholino target-specific probe to a silica microparticle. Rabbit α-globin and HIV-1 gag RNA transcripts were selectively captured using the method described.

IC ICM C12Q001-68
ICS C07H021-02; C07H021-04; C12N015-00
NCL 435006000
CC 3-1 (Biochemical Genetics)
ST RNA isolation morpholino probe hybridization **oligoamine** capture immobilization
IT Esters, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(aromatic, as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)
IT Disulfides
Esters, processes
Oligosaccharides, processes
Peptides, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Peptide nucleic acids
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(as target-specific probe; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Polyelectrolytes
(cationic, detectable reporter group; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(immobilization of oligonucleotides and analogs on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Oligonucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(immobilized, concentration of target sequences for hybridization with; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Oligonucleotides
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(morpholino; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT mRNA
RL: ANT (Analyte); ANST (Analytical study)
(poly(A)-containing; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Human immunodeficiency virus 1
Immobilization, biochemical
Nucleic acid amplification (method)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Polyamines
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Microparticles
(silica, as solid substrate; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT Glycols, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(vicinal, as cleavable linkage; reagent and method for isolation and

detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 612-25-9D, o-Nitrobenzyl alcohol, esters
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(as cleavable linkage; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 13822-56-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(in immobilization of oligonucleotides on silica; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 7631-86-9, Silica, uses **9004-34-6**, Cellulose, uses
RL: DEV (Device component use); USES (Uses)
(microparticles of, immobilization of oligonucleotides on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 185767-62-8DP, biotin-labeled, morpholino-linked 267640-43-7DP, biotin-labeled, morpholino-linked 267640-44-8DP, biotin-labeled, morpholino-linked 267640-45-9DP, biotin-labeled, morpholino-linked
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 267640-42-6DP, biotin-labeled, morpholino-linked
RL: BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 2038-03-1DP, 4-Morpholineethanamine, conjugates with activated cellulose 2706-56-1DP, 2-Pyridineethanamine, conjugates with activated cellulose 5036-48-6DP, 1-(3-Aminopropyl)imidazole, conjugates with activated cellulose
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT 267423-07-4
RL: MOA (Modifier or additive use); USES (Uses)
(spacer in immobilization of oligonucleotides; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

IT **9004-34-6**, Cellulose, uses
RL: DEV (Device component use); USES (Uses)
(microparticles of, immobilization of oligonucleotides on; reagent and method for isolation and detection of selected nucleic acid sequences using morpholino probe and **oligoamine** capture)

RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 25 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:557804 HCAPLUS
DOCUMENT NUMBER: 132:26724
TITLE: An in vitro mucosal model predictive of bioadhesive

agents in the oral cavity

AUTHOR(S): Patel, D.; Smith, A. W.; Grist, N.; Barnett, P.; Smart, J. D.
CORPORATE SOURCE: School of Pharmacy and Biomedical Sciences, Institute of Biomedical and Biomolecular Sciences, Biomaterials and Drug Delivery Group, University of Portsmouth, Portsmouth, UK

SOURCE: Journal of Controlled Release (1999), 61(1-2), 175-183
CODEN: JCREEC; ISSN: 0168-3659
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The formulation of a drug/carrier complex that can be distributed and retained for extended periods within the oral cavity would be advantageous in the treatment of local conditions. In this study, an in vitro system was developed to investigate the binding of bioadhesive **macromols**. to buccal epithelial cells, without having to alter their physicochem. properties by the addition of 'marker' entities. In this innovative approach, a lectin-binding inhibition technique, involving an avidin-biotin complex and a colorimetric detection system, was used to evaluate polymer binding. 0.5% polymer solns. in saline (pH 7.6) were left in contact with a standardized number of freshly collected human buccal cells for 15 min. The cells were then exposed to 10 mg L-1 biotinylated lectin from Canavalia ensiformis followed by 5 mg L-1 streptavidin peroxidase. The inhibition of lectin binding (i.e., by 'masking' of the binding site on the cell surface by the attached bioadhesive polymer) was measured and expressed as a percentage reduction in the rate of o-phenylenediamine oxidation over 1 min. From the wide range of polymer solns. screened, chitosan gave the greatest inhibition of lectin binding to the surface of buccal cells, while Me cellulose, gelatin, Carbopol 934P and polycarbophil also produced a substantial reduction Lectin binding inhibition was also observed for a selected number of polymer solns. when screened at pH 6.2. The presence of bound chitosan, polycarbophil and Carbopol 934P on the buccal cell surface was confirmed using direct staining techniques. It was concluded that this assay can be used to detect polymer binding to the cells present on the buccal mucosa, and the information gained used in the development of retentive drug/polymer formulations.

CC 63-5 (Pharmaceuticals)

IT **Polyelectrolytes**
(**cationic**; in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)

IT **Macromolecular** compounds
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)

IT 123-03-5, Cetylpyridinium chloride 9000-01-5, Acacia gum **9000-07-1**, Carrageenan 9002-89-5, Poly(vinyl alcohol) 9003-01-4, Poly(acrylic acid) 9003-39-8, PVP 9003-97-8, Polycarbophil **9004-32-4**, Carboxymethyl cellulose sodium salt **9004-61-9**, Hyaluronic acid **9004-62-0 9004-67-5**, Methyl cellulose **9005-38-3**, Sodium alginate **11138-66-2**, Xanthan 25322-68-3, PEG 28728-55-4, Polybrene 57916-92-4, Carbopol 934P 75537-01-8, Gantrez S-97 96827-24-6, Carbopol 1342 145687-02-1, Pemulen TR2 252191-11-0, Gantrez S 96
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)

IT **9012-76-4**, Chitosan
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)
IT **9000-07-1**, Carrageenan **9004-32-4**, Carboxymethyl cellulose sodium salt **9004-61-9**, Hyaluronic acid **9004-62-0 9004-67-5**, Methyl cellulose **9005-38-3**, Sodium alginate **11138-66-2**, Xanthan
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)
RN 9000-07-1 HCAPLUS
CN Carrageenan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

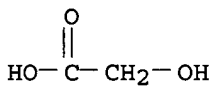
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-62-0 HCAPLUS
CN Cellulose, 2-hydroxyethyl ether (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 107-21-1
CMF C2 H6 O2

HO—CH_2—CH_2—OH

RN 9004-67-5 HCAPLUS
CN Cellulose, methyl ether (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 67-56-1
CMF C H4 O

H_3C—OH

RN 9005-38-3 HCAPLUS
CN Alginic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 11138-66-2 HCAPLUS
CN Xanthan gum (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9012-76-4**, Chitosan
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(in vitro mucosal model prediction of binding of bioadhesive agents to buccal epithelium)
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 26 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:185831 HCAPLUS
DOCUMENT NUMBER: 130:224319
TITLE: Novel polyanion-polycation microfibrid blend nonwovens based on cellulose derivatives
AUTHOR(S): Riedel, B.; Taeger, E.
CORPORATE SOURCE: Thueringisches Inst. Textil- Kunststoff-Forschung e.V., Rudolstadt, Germany
SOURCE: Chemical Fibers International (1999), 49(1), 55-57
CODEN: CFINF7; ISSN: 1434-3584
PUBLISHER: Deutscher Fachverlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polyelectrolyte (PEL) fibrides and microfibrides were manufactured by shear coagulation in the presence of a desolvation medium (acetone, Me2SO, or low-mol. polyoxyethylene). Polyanion fibrids were obtained from aqueous solns. of Na-CM-cellulose. Polycation fibrids were obtained from

HCl-chitosan solns. The titer and the morphol. appearance of the fibrids were determined by the viscosity of the precipitation bath as well as of the PEL solution,
by the temperature, and by the acting shearing forces. It was possible to manufacture microfibrids with an average diameter ≤1 μm. The morphol. of the polyanion (Pa) and polycation (Pc) fibrids was studied by scattering electron microscopy. Pa and Pc **macromols**. reacted along the contact surfaces of the related microfibrids forming hydroactive PEL complex membranes. A close PEL complex membrane lattice resulted in a blend nonwoven encapsulating the PEL microfibrids and sealing the nonwoven body closely. The finer the titer of the fibrids the closer the resulting PEL complex membrane lattice. The strength of the membrane lattice was the highest at an Pa/Pc ratio of 1:1. A procedure to ensure this ratio was depicted. The advantages of Pa/Pc microfibrid blend nonwovens on basis of cellulose derivs. were mentioned.

CC 40-10 (Textiles and Fibers)

IT **Polyelectrolytes**
(**cationic**, fibers; properties of polyanion-polycation microfibrid blend nonwovens based on cellulose derivs.)

IT **9004-32-4**, CMC 70694-72-3, Chitosan hydrochloride
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(fibers; properties of polyanion-polycation microfibrid blend nonwovens based on cellulose derivs.)

IT **9004-32-4**, CMC
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(fibers; properties of polyanion-polycation microfibrid blend nonwovens based on cellulose derivs.)

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

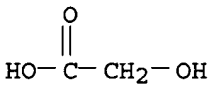
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 27 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:706697 HCAPLUS
DOCUMENT NUMBER: 130:57102
TITLE: Amine composition influences apparent activity of enzyme in charged film microcapsules

AUTHOR(S): Patil, R. T.; Speaker, T. J.
CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, Temple University, Philadelphia, PA, 19140, USA
SOURCE: Journal of Microencapsulation (1998), 15(6), 739-745
CODEN: JOMIEF; ISSN: 0265-2048
PUBLISHER: Taylor & Francis Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB It has been shown that, when captured in charged film microcapsules prepared from spermine alginate, intact viruses retain infectivity, isolated viral proteins retain immunogenicity, and trypsin retains enzymic activity. However, it was unclear whether the greater anionic strength of hemisulfate residues such as those in carrageenan might alter protein conformation and activity unfavorably in comparison with the lesser influence of alginate carboxylates. Further, the influence of the structure of the amine used to prepare the capsules was largely unknown. To examine these questions, trypsin, used as a model protein, was encased in microcapsules prepared from iota-carrageenan and **oligoamines** drawn from either the homologous series spermine, spermidine, putrescine or ethylenediamine, diethylenetriamine, triethylenetetramine, tetraethylenepentamine. The gross structures of encapsulated and native trypsin were compared by denaturing electrophoresis and their enzymic activity by the method of Hummel. In all encapsulations SDS PAGE gave no evidence of alteration of protein structure. When encapsulated, the apparent activity of trypsin was reduced by about 60 to 75%, but when the capsules were lysed in hypertonic saline activity was restored. This apparent reduction in activity is attributed to the diffusional barrier imposed by the encapsulating membrane but it should be recognized that it may be the result of reversible denaturation.

CC 63-5 (Pharmaceuticals)
ST enzyme activity charged film microcapsule carageenan **oligoamine**
IT 71-44-3, Spermine 107-15-3, Ethylenediamine, biological studies 110-60-1, Putrescine 111-40-0, Diethylenetriamine 112-24-3, Triethylenetetramine 112-57-2, Tetraethylenepentamine 124-20-9, Spermidine **9062-07-1**, ι-Carrageenan
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(amine composition influences apparent activity of enzymes in charged-film microcapsules)
IT **9062-07-1**, ι-Carrageenan
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(amine composition influences apparent activity of enzymes in charged-film microcapsules)
RN 9062-07-1 HCAPLUS
CN ι-Carrageenan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 28 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:420533 HCAPLUS
DOCUMENT NUMBER: 129:146546
TITLE: Aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine

AUTHOR(S): Vynios, D. H.; Vamvacas, S. S.; Kalpaxis, D. L.; Tsiganos, C. P.
CORPORATE SOURCE: Laboratory of Biochemistry, Department of Chemistry, University of Patras, Patras, 261 10, Greece
SOURCE: Analytical Biochemistry (1998), 260(1), 64-70
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new procedure for the immobilization of proteoglycans and the core protein thereof via their carbohydrate chains onto ELISA (ELISA) plate wells is presented. The aggrecan was immobilized via electrostatic interactions with spermine coupled to glutaraldehyde via Schiff's base, the latter being directly anchored onto ELISA wells. The amts. of aggrecan bound by this procedure measured immunochem. were 10-fold greater than those adsorbed by direct coating. The interaction of aggrecan and spermine may be inhibited by very small amts. of sulfated glycosaminoglycans or proteoglycans in a competitive manner, and therefore the system may be used for their quantitation. Bound aggrecan could react with link protein and therefore the system may be used for studying interactions of cartilage **macromols**. The method may also be used for direct quantitation of proteoglycans since the amts. adsorbed, in a given range of concns., are directly proportional to the amts. in solution (c) 1998 Academic Press.
CC 9-10 (Biochemical Methods)
IT **Proteins, specific or class**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(core; aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine)
IT **9004-61-9**, Hyaluronan 9007-27-6, Chondroitin 9050-30-0, Heparan sulfate 24967-93-9, Chondroitin 4-sulfate
RL: ANT (Analyte); ANST (Analytical study)
(aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine)
IT **71-44-3**, Spermine 111-30-8, Glutaraldehyde
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine)
IT **9004-61-9**, Hyaluronan
RL: ANT (Analyte); ANST (Analytical study)
(aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine)
RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **71-44-3**, Spermine
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(aggrecan immobilization onto polystyrene plates through electrostatic interactions with spermine)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 29 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:315262 HCAPLUS
DOCUMENT NUMBER: 129:92274
TITLE: **Macromolecular** design of cationic polyelectrolytes on the chitosan basis for achievement of high antimutagenic efficiency at gamma-irradiation
AUTHOR(S): Alexandrova, V. A.; Ryzhkov, D. V.; Obukhova, G. V.; Domnina, N. S.; Topchiev, D. A.; Kotlyarova, E. B.; Shevchenko, V. A.
CORPORATE SOURCE: A. V. Topchiev Institute Petrochemical Synthesis, Moscow, 117912, Russia
SOURCE: Macromolecular Symposia (1998), 130, 1-17
CODEN: MSYMEC; ISSN: 1022-1360
PUBLISHER: Huethig & Wepf Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new approach to the problem of construction of efficient antimutagenic (at γ-irradiation) systems was developed on the basis of the models, synthetic cationic polyelectrolytes, polyquaternary salts of diallyldimethylammonium type. Studies designed to reveal correlation between the structure and activity of polymers are of great importance for targeted synthesis of polymers capable to protect cells from γ-radiation. From this point of view a pos. contribution of the total charge of the macro-ion and antiradical activity of **polycations** into their antimutagenic effect were revealed. Taking into account the dependencies found, the **macromol**. design of super efficient antimutagenic systems on the basis of the natural **biodegradable polycation**-chitosan was realized. The protective efficiency (≤93%) of the systems is achieved by combination of an adsorption ability of the **polycation** matrix and antiradical activity of a hydrophobic derivative of hindered phenol incorporated into the polymer structure. These systems are able to scavenge short-lived radicals formed in water and to some extent to prevent the membrane lipid peroxidn. processes responsible for genetic damage at γ-irradiation

CC 8-2 (Radiation Biochemistry)

IT **Polyelectrolytes**
(**cationic**; **macromol**. **cationic** chitosan based polyelectrolytes for a high antimutagenic efficiency at γ -irradiation)

IT Mutation inhibitors
Radiation
Radical scavengers
(**macromol**. cationic chitosan based polyelectrolytes for a high antimutagenic efficiency at γ -irradiation)

IT **9012-76-4D**, Chitosan, derivs. containing quaternary ammonium groups
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(**macromol**. cationic chitosan based polyelectrolytes for a high antimutagenic efficiency at γ -irradiation)

IT 26062-79-3, Poly(diallyldimethylammonium chloride) 53694-17-0 209535-85-3
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**macromol**. cationic chitosan based polyelectrolytes for a high antimutagenic efficiency at γ -irradiation)

IT **9012-76-4D**, Chitosan, derivs. containing quaternary ammonium groups

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(**macromol**. cationic chitosan based polyelectrolytes for a high antimutagenic efficiency at γ -irradiation)
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 30 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:667263 HCAPLUS
DOCUMENT NUMBER: 127:322794
TITLE: Property-affecting and/or property-exhibiting compositions for therapeutic and diagnostic uses
INVENTOR(S): Rabbani, Elazar; Stavrianopoulos, Jannis G.; Donegan, James J.; Liu, Dakai; Kelker, Norman E.; Engelhardt, Dean L.
PATENT ASSIGNEE(S): Enzo Therapeutics, Inc., USA
SOURCE: Can. Pat. Appl., 275 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2190304	AA	19970616	CA 1996-2190304	19961114
EP 779365	A2	19970618	EP 1996-119961	19961212
EP 779365	A3	19991124		
R: DE, FR, GB, IT				
JP 09313190	A2	19971209	JP 1996-360043	19961216
US 2001006814	A1	20010705	US 1997-978633	19971125
US 2001006815	A1	20010705	US 1997-978634	19971125
US 2001006816	A1	20010705	US 1997-978637	19971125
US 2001007767	A1	20010712	US 1997-978632	19971125
US 2003087434	A1	20030508	US 1997-978635	19971125
US 2003104620	A1	20030605	US 1997-978636	19971125

PRIORITY APPLN. INFO.: US 1995-574443 A 19951215
AB Compns. useful for effecting and/or exhibiting changes in biol. functioning and processing in cells and biol. systems are provided which combine chemical modifications and/or ligand addns. with biol. functions in such a way as not to interfere substantially with the biol. functions. Such addnl. characteristics include nuclease resistance, targeting specific cells or cell receptors, and augmenting or decreasing interactions between the compns. and target cells. A title composition may constitute a nucleotide, nucleotide analog, nucleic acid, natural or synthetic polymer, ligand, or conjugate of a ligand with any of the preceding. For example, single-stranded DNA from a plasmid containing a gene of interest is complexed with an allylamine phosphoramidite-containing oligonucleotide primer (complementary to a region of the DNA distant from the gene of interest) which as been modified with trilactosyllysyllysine (preparation given), and the primer is extended with Klenow enzyme to form completely double-stranded DNA. On exposure of target cells to this DNA, the galactose moieties on the DNA bind to receptors on the cells, resulting in transport of the DNA into the cells. In another embodiment, DNA for antisense RNA sequences to regions of the HIV genome were inserted into the U1 small nuclear RNA coding region and the DNA was used to

transform U937 cells. The transformed cells were resistant to HIV infection, as shown by inhibition of virus replication and p24 antigen production

IC ICM C07H021-00
ICS A61K047-48; A61K031-70; A61K038-55

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 3

IT **Polyelectrolytes**
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(**cationic**; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

IT Antibodies
Fatty acids, biological studies
Polymers, biological studies
Polysaccharides, biological studies
Proteins, specific or class
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(conjugates, with nucleic acids; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

IT Carbohydrates, biological studies
Macromolecular compounds
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ligands; property-affecting and/or property-exhibiting compns. for therapeutic and diagnostic uses)

L39 ANSWER 31 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:479367 HCAPLUS
DOCUMENT NUMBER: 127:99844
TITLE: Complex cationic lipids as cytofectins
INVENTOR(S): Wheeler, Carl J.
PATENT ASSIGNEE(S): Vical Incorporated, USA
SOURCE: PCT Int. Appl., 55 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9719675	A2	19970605	WO 1996-US19721	19961127
WO 9719675	A3	19971002		
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2237316	AA	19970605	CA 1996-2237316	19961127
EP 863749	A2	19980916	EP 1996-943691	19961127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2000502061	T2	20000222	JP 1997-520757	19961127

PRIORITY APPLN. INFO.: US 1995-565756 A 19951130
WO 1996-US19721 W 19961127

OTHER SOURCE(S): MARPAT 127:99844

AB Cationic lipids (cytofectins) having a derivatized quaternary ammonium head group (Rosenthal phospholipase A inhibitor core structure) are provided which provide improved cell targeting ability and enhance transfective efficacy for neg. charged **macromols**. such as amino acids, peptides, polynucleotides, and polysaccharides. The head group is

attached to an alkyl linker having functional groups that provide sites for attachment of drugs, cell receptor ligands, or other bioactive agents. Thus, chloramphenicol acetyltransferase (CAT) DNA was coupled to (±)-N-(2-hydroxyethyl)-N,N-dimethyl-3,4-bis(lauryloxy)-1-propanaminium bromide (I) and administered intranasally to mice. The lungs were removed and extracted 2-3 days later and assayed for CAT. CAT expression was promoted by coupling to I.

IC ICM A61K009-127
ICS C07C229-12; C07C237-06; C07C279-12; C07C275-16; C07C271-20

CC 63-6 (Pharmaceuticals)

IT **Polyelectrolytes**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(anionic; complex **cationic** lipids as cytofectins)

IT Amino acids, biological studies
Monosaccharides
Nucleic acids
Nucleotides, biological studies
Peptides, biological studies
Polynucleotides
Polysaccharides, biological studies
Proteins, specific or class
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(conjugates, with cationic lipids; complex cationic lipids as cytofectins)

L39 ANSWER 32 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:266539 HCAPLUS
DOCUMENT NUMBER: 126:257861
TITLE: Aqueous etchant for microetching of copper and copper alloy
INVENTOR(S): Maki, Yoshiaki; Nakagawa, Toshiko; Yamada, Yasushi; Haruta, Takashi; Arimura, Maki
PATENT ASSIGNEE(S): Metsuku KK, Japan; MEC Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09041162	A2	19970210	JP 1995-196636	19950801
JP 3458023	B2	20031020		
CN 1249360	A	20000405	CN 1997-101824	19970129

PRIORITY APPLN. INFO.: JP 1995-196636 A 19950801

AB The etchant contains oxidants for Cu and 0.000001-1.0% **macromol**. compds. containing polyamine chains and/or cationic groups. The etchant provides coarsened Cu (alloy) surfaces showing excellent adhesion toward solder resists, and is useful for manufacture of wirings.

IC ICM C23F001-18
ICS H01L021-308

CC 76-14 (Electric Phenomena)
Section cross-reference(s): 46, 56

IT **Polyelectrolytes**

(**cationic**; polyamine chain- and/or **cationic** group-containing microetching agent for manufacture of printed circuit board)
IT 79-06-1D, Acrylamide, copolymer with quaternary ammonium salt-type diallylamine 100-42-5D, Styrene, quaternary ammonium salt, polymers 124-02-7D, Diallylamine, quaternary ammonium salt, copolymer with acrylamide 9002-98-6 **9004-34-6D**, Cellulose, cationic derivative, uses 26062-79-3, Unisence CP 104 63800-17-9, Sanfloc 700
RL: MOA (Modifier or additive use); USES (Uses)
(polyamine chain- and/or cationic group-containing microetching agent for manufacture of printed circuit board)
IT **9004-34-6D**, Cellulose, cationic derivative, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyamine chain- and/or cationic group-containing microetching agent for manufacture of printed circuit board)
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 33 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:187508 HCAPLUS
DOCUMENT NUMBER: 126:268364
TITLE: Complexes of adenovirus with **polycationic** polymers and cationic lipids increase the efficiency of gene transfer in vitro and in vivo
AUTHOR(S): Fasbender, Al; Zabner, Joseph; Chillon, Miguel; Moninger, Thomas O.; Puga, Aurita P.; Davidson, Beverly L.; Welsh, Michael J.
CORPORATE SOURCE: Dep. Internal Med. and Physiology and Biophysics, Univ. Iowa College Med., Iowa City, IA, 52242, USA
SOURCE: Journal of Biological Chemistry (1997), 272(10), 6479-6489
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Improving the efficiency of gene transfer remains an important goal in developing new treatments for cystic fibrosis and other diseases. Adenovirus vectors and non-viral vectors each have specific advantages, but they also have limitations. Adenovirus vectors efficiently escape from the endosome and enter the nucleus, but the virus shows limited binding to airway epithelia. Nonviral cationic vectors bind efficiently to the neg. charged cell surface, but they do not catalyze subsequent steps in gene transfer. To take advantage of the unique features of the two different vector systems, we noncovalently complexed cationic mols. with recombinant adenovirus encoding a transgene. Complexes of cationic polymers and cationic lipids with adenovirus increased adenovirus uptake and transgene expression in cells that were inefficiently infected by adenovirus alone. Infection by both complexes was independent of adenovirus fiber and its receptor and occurred via a different cellular pathway than adenovirus alone. Complexes of cationic mols. and adenovirus also enhanced gene transfer to differentiated human airway epithelia in vitro and to the nasal epithelium of cystic fibrosis mice in vivo. These data show that complexes of adenovirus and cationic mols. increase the efficiency of gene transfer, which may enhance the development og gene therapy.
CC 63-3 (Pharmaceuticals)

Section cross-reference(s): 3, 10
ST gene therapy adenovirus vector **polycation** lipid; cystic fibrosis gene therapy vector **polycation**
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(CFTR; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Cystic fibrosis
Gene therapy
Human adenovirus
Human adenovirus 2
(adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Virus vectors
(adenovirus; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Polyelectrolytes
(cationic; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Lipids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cationic; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Respiratory tract
(epithelium, gene transfer to airway epithelium; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Nose
(epithelium; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT Histones
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT 2462-63-7, Dioleoylphosphatidylethanolamine **25104-18-1**, Poly-L-lysine **38000-06-5**, Poly-L-lysine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT 137056-72-5
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cholesterol-based cationic lipids; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT 124050-77-7, DOGS 153312-64-2, DMRIE 158571-62-1, Lipofectamine 188565-00-6, Tfx 50
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-cholesterol-based cationic lipids; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)
IT **71-44-3**, Spermine 9002-98-6 **9015-73-0**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

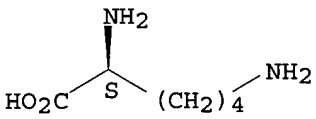
IT **25104-18-1**, Poly-L-lysine **38000-06-5**, Poly-L-lysine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

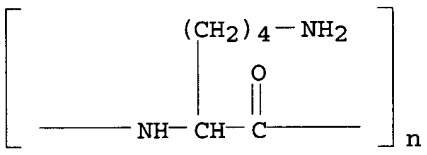
CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

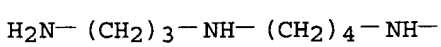


RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT **71-44-3**, Spermine **9015-73-0**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(non-lipid **polycations**; adenovirus vector with **polycationic** polymers and cationic lipids increase efficiency of gene transfer in vitro and in vivo)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

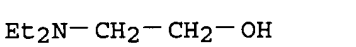
CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O



L39 ANSWER 34 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:80110 HCAPLUS
DOCUMENT NUMBER: 126:71672
TITLE: Comb-Type **Polycations** Effectively Stabilize DNA Triplex
AUTHOR(S): Maruyama, Atsushi; Katoh, Maiko; Ishihara, Tsutomu; Akaike, Toshihiro
CORPORATE SOURCE: Department of Biomolecular Engineering, Tokyo Institute of Technology, Yokohama, 226, Japan
SOURCE: Bioconjugate Chemistry (1997), 8(1), 3-6
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB DNA triplex formation has been studied as a potential strategy for regulation of gene expression. The triplex is, however, unstable under physiol. conditions, so that an effective stabilizer for the triplex formation is needed. Here is shown a novel strategy to stabilize the triplex based on the mol. design of a comb-type **polycation**. Linear **polycations**, such as poly(L-lysine) and poly(L-arginine), thermally stabilize DNA duplexes (and triplexes). The complexes between DNA and the **polycation** are irreversible and are liable to precipitate out of aqueous media. The irreversibility and phase separating properties of the complex impede association of single-stranded (ss) DNAs in the complex to form duplexes and triplexes. A comb-type **polycation** consisting of a poly(L-lysine) backbone and grafted chains of hydrophilic polymers was prepared The comb-type copolymers increased solubility of their complex with DNA and suppressed conformational changes of DNA. Thermal melting curve analyses revealed that the comb-type copolymer markedly stabilized DNA triplexes and did not disturb ssDNAs in forming duplexes and triplexes. Reversible and one-step melting/reassocn. transitions of poly(dA)·2poly(dT) triplex were shown in the presence of the copolymers. The stabilizing effect of the copolymer was larger than that of spermine, a polyamine considered effective in stabilizing triplexes. These results indicated that mol. design of **polycations** with a comb-type structure is a novel strategy to create efficient triplex stabilizers. Such comb-type copolymer consisting of various types of **polycation** backbones and hydrophilic graft chains may have many applications in which specific and precise interactions of polynucleotides are involved.

CC 6-2 (General Biochemistry)
Section cross-reference(s): 34
ST comb copolymer **polycation** DNA triplex stabilization
IT Quaternary structure
(DNA triplex; comb-type **polycation** preparation and stabilization of DNA triplex)
IT Polyelectrolytes
(cationic; comb-type **polycation** preparation and stabilization of

DNA triplex)
IT Conformation
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT DNA
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT **71-44-3**, Spermine
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); BIOL (Biological study); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT **9004-54-0DP**, Dextran, polylysine graft comb copolymer, biological studies **25104-18-1DP**, Poly-L-lysine, dextran graft comb copolymer **38000-06-5DP**, Poly-L-lysine, dextran graft comb copolymer
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT 30177-40-3
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); BIOL (Biological study); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT 25988-63-0, Poly(L-lysine) hydrobromide
RL: MSC (Miscellaneous); RCT (Reactant); RACT (Reactant or reagent)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT **9004-54-0**, Dextran, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(comb-type **polycation** preparation and stabilization of DNA triplex)
IT **71-44-3**, Spermine
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); BIOL (Biological study); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

IT **9004-54-0DP**, Dextran, polylysine graft comb copolymer, biological studies **25104-18-1DP**, Poly-L-lysine, dextran graft comb copolymer **38000-06-5DP**, Poly-L-lysine, dextran graft comb copolymer
RL: BPR (Biological process); BSU (Biological study, unclassified); MSC (Miscellaneous); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(comb-type **polycation** preparation and stabilization of DNA triplex)

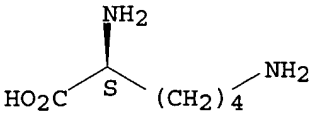
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

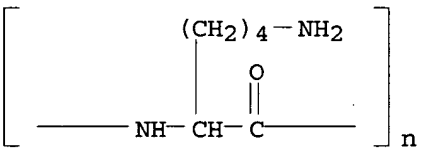
CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT **9004-54-0**, Dextran, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(comb-type **polycation** preparation and stabilization of DNA triplex)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 35 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:645650 HCAPLUS
DOCUMENT NUMBER: 125:283945
TITLE: Muddy water flocculating method useful for dredging and reclaiming work fields
INVENTOR(S): Matsumoto, Katsumi
PATENT ASSIGNEE(S): Kurita Water Ind Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08215686	A2	19960827	JP 1995-49002	19950214

PRIORITY APPLN. INFO.: JP 1995-49002 19950214

AB Cationic polysaccharides and anionic **macromol**. compds. are added to muddy water to carry out flocculation treatment for the muddy water. The separated mud has high coherent d. and solid-liquid separation can be carried out easily.
IC ICM C02F001-54
ICS B01D021-01; C02F001-56
CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 58
ST flocculation muddy water dredging reclaiming field; anionic polymer flocculant muddy water; cationic polysaccharide flocculant muddy water; muddy water flocculant ionic **macromol**
IT Drilling fluids and muds
Polyelectrolytes
(**cationic** polysaccharide and anionic **macromol**. compound for muddy water flocculation)
IT **Polysaccharides, uses**
RL: TEM (Technical or engineered material use); USES (Uses)
(cationic, cationic polysaccharide and anionic **macromol**. compound for muddy water flocculation)
IT Wastewater treatment
(flocculation, cationic polysaccharide and anionic **macromol**. compound for muddy water flocculation)
IT 9003-06-9, Acrylamide-acrylic acid copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(anionic; cationic polysaccharide and anionic **macromol**. compds. for muddy water flocculation)
IT **9000-30-0D**, Guar gum, cationized **9005-25-8D**, Starch, cationized
RL: TEM (Technical or engineered material use); USES (Uses)
(cationic polysaccharide and anionic **macromol**. compound for muddy water flocculation)
IT **9000-30-0D**, Guar gum, cationized **9005-25-8D**, Starch, cationized
RL: TEM (Technical or engineered material use); USES (Uses)
(cationic polysaccharide and anionic **macromol**. compound for muddy water flocculation)
RN 9000-30-0 HCAPLUS
CN Guar gum (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9005-25-8 HCAPLUS
CN Starch (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 36 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:534978 HCAPLUS
DOCUMENT NUMBER: 125:160359
TITLE: **Polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity
INVENTOR(S): De Polo, Nicholas J.; Hsu, David Chi-Tang
PATENT ASSIGNEE(S): Chiron Viagene, Inc., USA
SOURCE: PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9621036	A2	19960711	WO 1995-US17005	19951226
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9646905	A1	19960724	AU 1996-46905	19951226
PRIORITY APPLN. INFO.:			US 1994-366787	19941230
			WO 1995-US17005	19951226

AB Nucleic acid condensing agents with reduced immunogenicity are generated either by conjugation of **polycations** or by selection of basic amino acid regions from proteins. Conjugation involves a chemical linkage between a polyalkylene glycol, such as polyethylene glycol, or a polysaccharide, such as dextran, and a **polycation**. Addnl., gene delivery vehicles, such as viral vectors, may be conjugated with polyalkylene glycol or polysaccharide, to reduce their immunogenicity. Basic amino acid regions of proteins are identified by isoelec. point, and amino acid composition These condensing agents are complexed with nucleic acids and used to deliver agents to cells. Immunogenicity is assessed by whether neutralizing antibody is induced and by whether a serum component inactivates the complexes.

IC ICM C12N015-87
ICS A61K047-87

CC 3-1 (Biochemical Genetics)

ST nucleic acid condensing agent immunogenicity **polycationic**; transformation nucleic acid condensing agent

IT Antibodies
Transferrins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Polyoxyalkylenes, biological studies
Polysaccharides, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(conjugates with **polycations**; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Transformation, genetic
(**polycationic** complexes for delivery of nucleic acids in; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Nucleic acids
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Sialoglycoproteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(asialo-, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT **Peptides, biological studies**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(basic, conjugates, with polyalkylene glycols or polysaccharides; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Histones
Protamines
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(conjugates, with polyalkylene glycols or polysaccharides; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Therapeutics
(geno-, **polycationic** complexes for delivery of nucleic acids in; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Hemopoietins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hematopoietic cell growth factors KL, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Lymphokines and Cytokines
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(interleukins, conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT Lipoproteins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(low-d., conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT **71-44-3D**, Spermine, conjugates with polyalkylene glycols or polysaccharides 110-60-1D, Putrescine, conjugates with polyalkylene glycols or polysaccharides 124-20-9D, Spermidine, conjugates with polyalkylene glycols or polysaccharides **24937-47-1D**, Polyarginine, conjugates with polyalkylene glycols or polysaccharides 24937-49-3D, Polyornithine, conjugates with polyalkylene glycols or polysaccharides 25104-12-5D, Polyornithine, conjugates with polyalkylene glycols or polysaccharides **25104-18-1D**, Polylysine, conjugates with PEG **25212-18-4D**, Polyarginine, conjugates with polyalkylene glycols or polysaccharides **38000-06-5D**, Polylysine, conjugates with PEG
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(as nucleic acid condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT 11096-26-7, Erythropoietin 81627-83-0, M-CSF 83869-56-1, GM-CSF 143011-72-7, G-CSF
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(conjugates with DNA-**polycation** complexes for targeted delivery; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

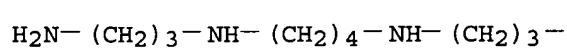
IT **9004-54-0DP**, Dextran, conjugates with **polycations** 25322-68-3DP, conjugates with **polycations**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT 111575-54-3P
RL: BUU (Biological use, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation and conjugation with **polycations** of; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

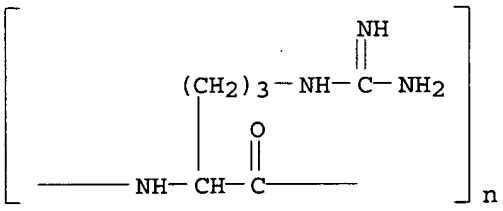
IT 79934-70-6DP, conjugate with polylysine
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as DNA condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

IT **71-44-3D**, Spermine, conjugates with polyalkylene glycols or polysaccharides **24937-47-1D**, Polyarginine, conjugates with polyalkylene glycols or polysaccharides **25104-18-1D**, Polylysine, conjugates with PEG **25212-18-4D**, Polyarginine, conjugates with polyalkylene glycols or polysaccharides **38000-06-5D**, Polylysine, conjugates with PEG
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as nucleic acid condensing agent; **polycationic** conjugates of polyalkylene glycols or polysaccharides as nucleic acid condensing agents with reduced immunogenicity)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)



RN 24937-47-1 HCAPLUS
CN Poly[imino[(1S)-1-[3-[(aminoiminomethyl)amino]propyl]-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)

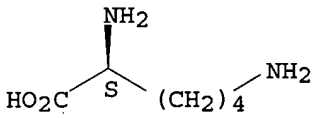


RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

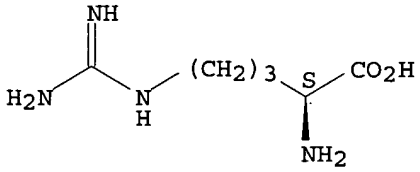


RN 25212-18-4 HCAPLUS
CN L-Arginine, homopolymer (9CI) (CA INDEX NAME)

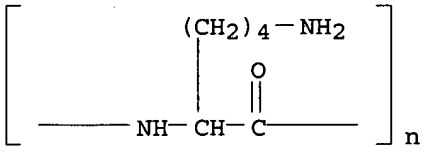
CM 1

CRN 74-79-3
CMF C6 H14 N4 O2

Absolute stereochemistry.



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



IT **9004-54-0DP**, Dextran, conjugates with **polycations**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**polycationic** conjugates of polyalkylene glycols or

polysaccharides as nucleic acid condensing agents with reduced immunogenicity)
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 37 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:398014 HCAPLUS
DOCUMENT NUMBER: 122:185284
TITLE: The role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration
AUTHOR(S): Elferink, Jan G. R.; de Koster, Ben M.
CORPORATE SOURCE: Department of Medical Biochemistry, University of Leiden, POB 9503, RA Leiden, 2300, Neth.
SOURCE: Chemico-Biological Interactions (1995), 95(1,2), 203-14
CODEN: CBINA8; ISSN: 0009-2797
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The polycation DEAE-dextran caused a strong enhancement of non-directed migration of rabbit peritoneal neutrophils. The activating effect on migration was completely annulled in the presence of the polyanion poly-D-glutamic acid, indicating that the effect depended on the pos. charge of the **macromol**. Chemotaxis activated by the chemotactic peptide fMLP was only slightly affected by the polycation. In contrast with fMLP-activation, stimulation of migration by DEAE-dextran was dependent on the presence of extracellular Ca2+. DEAE-dextran also stimulated migration of electroporated neutrophils. The stimulation was absent when calcium was not present; the increase of migration was strongest at Ca2+- concns. between 100 nM and 1 μM Ca2+. This indicates that the requirement for extracellular Ca2+ in intact cells is a reflection of the intracellular requirement. Several types of calcium blockers gave a moderate inhibition of DEAE-dextran activated migration. Activation of migration by DEAE-dextran of electroporated neutrophils was completely inhibited by calcium channel blockers, at very low concns. The results suggest that both Ca2+- fluxes across the plasma membrane and Ca2+ from intracellular stores are required for DEAE-activated migration, and that the calcium from the intracellular source is required on a place where the extracellular Ca2+ has no, or limited, admittance.
CC 15-10 (Immunochemistry)
IT **Cations**
(**polyvalent**, role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)
IT **9015-73-0**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)
IT **9015-73-0**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(role of calcium ions in DEAE-dextran- induced stimulation of neutrophil migration)
RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O

$Et_2N-CH_2-CH_2-OH$

L39 ANSWER 38 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:259960 HCAPLUS
DOCUMENT NUMBER: 122:38839
TITLE: Microcapsules containing cells or enzymes for pharmaceutical use
INVENTOR(S): Schrezenmeir, Juergen; Pommersheim, Rainer; Vogt, Walter
PATENT ASSIGNEE(S): Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4312970	A1	19941027	DE 1993-4312970	19930421
EP 681834	A1	19951115	EP 1994-107025	19940505
EP 681834	B1	19991208		
R: CH, DE, DK, ES, FR, GB, GR, IT, LI, NL				
ES 2143513	T3	20000516	ES 1994-107025	19940505
GR 3032897	T3	20000731	GR 2000-400592	20000307

PRIORITY APPLN. INFO.: DE 1993-4312970 19930421
EP 1994-107025 A 19940505

AB Microcapsules are prepared for implantation in tissues or for biotechnol. use which comprise a core containing living cells and/or enzymes, surrounded by multiple biocompatible coating layers. Each coating layer consists of a network of interwoven **macromols**. which form a porous membrane; the pores of adjacent layers interconnect to form continuous radial passages. At least 1 of the layers is mech. stable, and ≥1 layer has a pore size at least as large as (a) the mols. required for maintenance of the enclosed cells or (b) the substrates, cofactors, or products of the enclosed enzymes. Methods for preparation of core particles (droplets) of precisely regulated diameter in a compression chamber undergoing magnetostrictive or piezoelec. volume change, and for coating the core particles with anionic, cationic, or neutral polymers, are described.

IC ICM B01J013-02
ICS A61K009-50; C12N009-00; C12N005-00; A61F002-02
CC 63-6 (Pharmaceuticals)
IT **Polyelectrolytes**
(**cationic**, porous coatings; microcapsules containing cells or

enzymes for pharmaceutical use)
IT **Polysaccharides, biological studies**
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(sulfates, porous coatings; microcapsules containing cells or enzymes for pharmaceutical use)
IT 9002-98-6, Polyethylenimine 9003-01-4, Poly(acrylic acid)
9012-76-4, Chitosan 25087-26-7, Poly(methacrylic acid)
26101-52-0, Poly(vinylsulfonic acid) 27754-99-0, Poly(vinylphosphonic acid) 28301-34-0
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(porous coatings; microcapsules containing cells or enzymes for pharmaceutical use)
IT **9012-76-4**, Chitosan
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(porous coatings; microcapsules containing cells or enzymes for pharmaceutical use)
RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 39 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:646185 HCAPLUS
DOCUMENT NUMBER: 121:246185
TITLE: Hyaluronic acid inhibits polycation-induced cellular responses
AUTHOR(S): Ialenti, A.; Ianaro, A.; Brignola, G.; Marotta, P.; Rosa, M. Di
CORPORATE SOURCE: Department of Experimental Pharmacology, University of Naples 'Federico II', Naples, 49-80131, Italy
SOURCE: Mediators of Inflammation (1994), 3(4), 287-9
CODEN: MNFLEF; ISSN: 0962-9351
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pos. charged **macromols**. cause a variety of pathol. events through their electrostatic interaction with anionic sites present on the membrane of target cells. The present study investigated the effect of hyaluronic acid, a neg. charged mol., on rat paw edema induced by poly-L-lysine as well as on the histamine release from rat mast cells and NO formation by rabbit aorta, both induced by this polycation. Hyaluronic acid suppressed these poly-L-lysine-induced effects, possibly due to its neg. charges, which may balance the effects of pos. charged polycations.
CC 1-12 (Pharmacology)
IT **Cations**
(**polyvalent**, hyaluronic acid inhibition of cellular responses to)
IT **9004-61-9**, Hyaluronic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hyaluronic acid inhibition of cellular responses to polycations)
IT **9004-61-9**, Hyaluronic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hyaluronic acid inhibition of cellular responses to polycations)

RN 9004-61-9 HCAPLUS
CN Hyaluronic acid (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 40 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1993:642942 HCAPLUS
DOCUMENT NUMBER: 119:242942
TITLE: Detection of nucleic acids with immobilized polynucleotide analogs and **polycationic** reporter moieties
INVENTOR(S): Summerton, James; Weller, Dwight
PATENT ASSIGNEE(S): Anti-gene Development Group, USA
SOURCE: U.S., 43 pp. Cont.-in-part of U.S. Ser. No. 712,396.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5217866	A	19930608	US 1986-944707	19861218
EP 639582	A2	19950222	EP 1994-116630	19860314
EP 639582	A3	19950906		
EP 639582	B1	19980916		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 5142047	A	19920825	US 1987-100033	19870923
US 5034506	A	19910723	US 1989-454055	19891220
US 5235033	A	19930810	US 1989-454056	19891220
US 5185444	A	19930209	US 1991-799681	19911121
US 5521063	A	19960528	US 1993-15211	19930209
US 5378841	A	19950103	US 1993-74120	19930608
US 5470974	A	19951128	US 1994-202664	19940225
US 5506337	A	19960409	US 1994-242159	19940511
US 5698685	A	19971216	US 1995-414018	19950331

PRIORITY APPLN. INFO.:
US 1985-712396 A2 19850315
US 1986-907842 A2 19860910
US 1986-911258 A2 19860924
EP 1986-902595 A3 19860314
US 1986-944707 A2 19861218
US 1987-100033 A2 19870923
US 1989-454055 A2 19891220
US 1989-454056 A1 19891220
US 1989-454057 B1 19891220
US 1991-719732 A2 19910620
US 1991-799681 A1 19911121
US 1992-880883 B1 19920508
US 1992-979158 A1 19921128
US 1992-988895 B2 19921210
US 1993-15211 A2 19930209
US 1994-242159 A3 19940511

AB A fast, sensitive, single-probe method for detection of nucleic acids using a carrier-bound polynucleotide analog as probe and a reporter moiety with a **polycationic** tail is described. The hybridization probe is a polymer carrying purines and pyrimidines on an achiral, uncharged backbone; the backbone has no net charge and is 4-7 atoms long to give the appropriate spacing for successful base-pairing. The reporter moiety has a **polycationic** tail that reacts with the polyanionic backbone of

the bound nucleic acid, but not with the uncharged probe. A 19-subunit carbamate-linked probe for a conserved sequence of the AIDS virus was prepared by stepwise assembly of oligonucleotide blocks using chemical of the prior art. Aminomethylated polystyrene was derivatized with succinic anhydride followed by disuccinimido carbonate and 6-aminohexanol to give a hydroxyterminated spacer that was then activated by standard methods. Internal amino groups were protected and the probe was then coupled to the carrier using an active amino group. The coupling of reporter enzymes to the **polycationic** reporter moiety is also described.

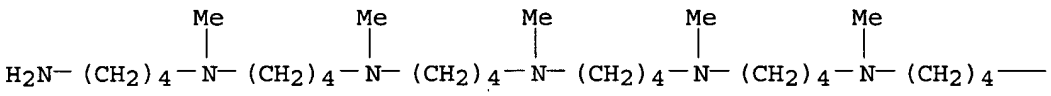
IC ICM C12Q001-68
NCL 435006000
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 7, 9
ST polynucleotide analog nucleic acid hybridization; nucleic acid hybridization **polycationic** reporter
IT Nucleic acid hybridization
(immobilized uncharged polynucleotide analog as probe and **polycationic** reporter moieties in)
IT Virus, animal
(AIDS-associated retrovirus 2, determination by nucleic acid hybridization of,
immobilized oligonucleotide probes with uncharged backbones for and **polycationic** reporter moieties in)
IT **Nucleotides, polymers**
RL: PREP (Preparation)
(**di**-, amide-linked, preparation of, in synthesis of oligonucleotide probes with uncharged backbones)
IT Virus, animal
(herpes simplex, determination by nucleic acid hybridization of, immobilized oligonucleotide probes with uncharged backbones for and **polycationic** reporter moieties in)
IT **Nucleotides, polymers**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**oligo**-, morpholinylthiocarbamate-linked, preparation of)
IT Amines, biological studies
RL: BIOL (Biological study)
(poly-, as **polycationic** tail of reporter oligonucleotides for nucleic acid hybridization)
IT Amides, reactions
RL: PREP (Preparation)
(poly-, oligomeric, reduction of, in preparation **polycationic** tails for reporter oligonucleotides for nucleic acid hybridization)
IT **151170-95-5**
RL: USES (Uses)
(**polycationic** tail for reporter oligonucleotide for nucleic acid hybridization)
IT 109970-45-8P
RL: PREP (Preparation)
(preparation of, as **polycationic** fluorescent reporter for nucleic acid hybridization)
IT 102-71-6, Triethanolamine, reactions 108-30-5, Succinic anhydride, reactions **556-33-2**, Triglycine 7087-68-5, Diisopropylethylamine 9003-53-6D, Polystyrene, aminomethylated **9004-34-6**, Cellulose, reactions 12640-54-9D, Dowex 50, pyridinium resins 16969-45-2D, Dowex 50 resins 74124-79-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, in preparation matrix for immobilization of oligonucleotide analogs with uncharged backbones)
IT 105-83-9, Bis-(3-aminopropyl)methylamine 605-65-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, in preparation **polycationic** fluorescent reporter for nucleic acid hybridization)

IT **151170-95-5**
RL: USES (Uses)
(**polycationic** tail for reporter oligonucleotide for nucleic acid hybridization)

RN 151170-95-5 HCAPLUS
CN 5,10,15,20,25-Pentaazanonacosane-1,29-diamine, N,N,5,10,15,20,25-heptamethyl- (9CI) (CA INDEX NAME)

PAGE 1-A

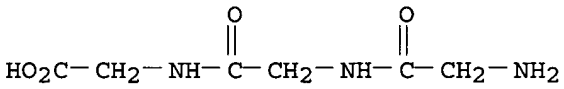


PAGE 1-B

—NMe_2

IT **556-33-2**, Triglycine **9004-34-6**, Cellulose, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, in preparation matrix for immobilization of oligonucleotide analogs with uncharged backbones)

RN 556-33-2 HCAPLUS
CN Glycine, glycylglycyl- (9CI) (CA INDEX NAME)



RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 41 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:487148 HCAPLUS
DOCUMENT NUMBER: 117:87148
TITLE: Polyionic regulation of cartilage development: promotion of chondrogenesis in vitro by polylysine is associated with altered glycosaminoglycan biosynthesis and distribution
AUTHOR(S): San Antonio, James D.; Jacenko, Olena; Yagami, Machiko; Tuan, Rocky S.
CORPORATE SOURCE: Dep. Biol., Univ. Pennsylvania, Philadelphia, PA, 19104, USA
SOURCE: Developmental Biology (Orlando, FL, United States) (1992), 152(2), 323-35
CODEN: DEBIAO; ISSN: 0012-1606

DOCUMENT TYPE: Journal
LANGUAGE: English
AB The development of cartilage nodules in cultures of chick limb bud mesenchyme (Hamburger-Hamilton stages 23/24) is significantly promoted when the culture medium is supplemented with poly-L-lysine (PL) (Mr ≥ 14 K). The findings presented here are consistent with the hypothesis that PL may promote chondrogenesis by interacting electrostatically with sulfated glycosaminoglycans (GAGs): (1) poly-L-ornithine, poly-L-histidine, poly-D,L-lysine, and lysine-containing heteropolypeptides stimulate chondrogenesis in proportion to their contents of cationic residues; (2) the effects of PL are diminished when limb mesenchyme cultures are supplemented with exogenous GAGs, including heparin, dermatan sulfate, and chondroitin sulfate; (3) in high d. cultures of limb bud mesenchyme, the release of sulfated **macromols**., but not of proteins in general, into the culture medium was significantly inhibited by PL (398K Mr) treatment, and a net increase in total GAG content of the PL-treated cultures was observed; and (4) in monolayer cultures of cells derived from other chick embryonic tissues, including liver, skeletal muscle, and calvaria, PL treatment promoted the cell layer-associated retention of sulfated GAG. These effects were not observed using the nonstimulatory, low Mr PL (4K). It is proposed that PL may promote chondrogenesis by interacting electrostatically with cartilage GAGs, thus trapping the extracellular matrix around the newly emerging cartilage nodules and thereby stabilizing their growth and differentiation.
CC 12-3 (Nonmammalian Biochemistry)
IT **Glycosaminoglycans, biological studies**
RL: FORM (Formation, nonpreparative)
(formation of, cartilage development in chicken in relation to)
IT **Polyelectrolytes**
(**cationic**, cartilage development in chicken response to)

L39 ANSWER 42 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1991:533349 HCAPLUS
DOCUMENT NUMBER: 115:133349
TITLE: Polycations induce microvascular leakage of **macromolecules** in hamster cheek pouch
AUTHOR(S): Rosengren, Sanna; Arfors, Karl E.
CORPORATE SOURCE: Pharm. Exp. Med., La Jolla, CA, 92037, USA
SOURCE: Inflammation (New York, NY, United States) (1991), 15(3), 159-72
CODEN: INFLD4; ISSN: 0360-3997
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The microvascular response to two polycationic proteins, poly-L-lysine (mol wt 104,000) and leukocyte elastase, was studied in the hamster cheek pouch microcirculation model. A 2-min topical application of polylysine (100 μg/mL) induced vigorous **macromol**. leakage from venules only that declined within 30 min. A second application induced significantly less leakage. The leakage was inhibited by admixing polylysine with dextran sulfate prior to application or by giving hamsters an i.v. injection of dextran sulfate. The histamine antagonist pyrilamine did not interfere with the leakage, and only a few degranulated mast cells were found after polylysine application. No intravascular adhesion of leukocytes could be detected. Elastase (100 μg/mL) was deposited adjacent to venules with micropipets. The resulting leakage response was not inhibited by L658,758, an inhibitor of elastase enzymic activity, but by dextran sulfate. These results may prove significant in light of the numerous polycationic proteins present within neutrophil granules.

CC 14-11 (Mammalian Pathological Biochemistry)
ST polycation venule **macromol** leakage inflammation; poly lysine venule **macromol** leakage inflammation; leukocyte elastase venule **macromol** leakage inflammation
IT Leukocyte
(elastase of, **macromol**. leakage from venules of cheek pouch induced by, inflammation in relation to)
IT Inflammation
(leukocyte elastase and polylysine induction of **macromol**. leakage from venules of cheek pouch in relation to)
IT **Cations**
(**polyvalent, macromol**. leakage from venules of cheek pouch induced by, polyanion inhibition of, inflammation in relation to)
IT Anions
(polyvalent, polycation-induced **macromol**. leakage from venules of cheek pouch inhibition by, inflammation in relation to)
IT Cheek
(pouch, leukocyte elastase and polylysine induction of **macromol** . leakage from venules of, inflammation in relation to)
IT Vein
(venule, leukocyte elastase and polylysine induction of **macromol**. leakage from, of cheek pouch, inflammation in relation to)
IT 9004-06-2, Elastase
RL: BIOL (Biological study)
(leukocyte, **macromol**. leakage from venules of cheek pouch induced by, dextran sulfate inhibition of, inflammation in relation to)
IT 25104-18-1, Poly-L-lysine 38000-06-5, Poly-L-lysine
RL: BIOL (Biological study)
(**macromol**. leakage from venules of cheek pouch induced by, dextran sulfate inhibition of, inflammation in relation to)
IT **9042-14-2**, Dextran sulfate
RL: BIOL (Biological study)
(polycation-induced **macromol**. leakage from venules of cheek pouch inhibition by, inflammation in relation to)
IT **9042-14-2**, Dextran sulfate
RL: BIOL (Biological study)
(polycation-induced **macromol**. leakage from venules of cheek pouch inhibition by, inflammation in relation to)
RN 9042-14-2 HCAPLUS
CN Dextran, hydrogen sulfate (9CI) (CA INDEX NAME)

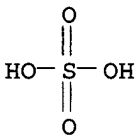
CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 7664-93-9
CMF H2 O4 S



L39 ANSWER 43 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:511468 HCAPLUS
DOCUMENT NUMBER: 113:111468
TITLE: Effect of polyanions and polycations on detyrosination of tubulin and microtubules at steady state
AUTHOR(S): Lopez, Ruben A.; Arce, Carlos A.; Barra, Hector S.
CORPORATE SOURCE: Fac. Cienc. Quim., Univ. Nac. Cordoba, Cordoba, 5016, Argent.
SOURCE: Biochimica et Biophysica Acta (1990), 1039(2), 209-17
CODEN: BBACAQ; ISSN: 0006-3002
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Microtubule protein prepns. purified from rat brain were used to study the effect of polycations and polyanions on the release of the COOH-terminal tyrosine of the α-chain of tubulin catalyzed by tubulin carboxypeptidase. Most of the polycations and polyanions tested, independently on the ionogenic group, inhibited the reaction in a concentration-dependent fashion. Under steady-state conditions, detyrosination of the microtubule pool was inhibited to the same degree as occurred with the nonassembled tubulin pool, except in the case of chondroitin sulfate. This compound inhibited detyrosination of the nonassembled tubulin pool, but not that of microtubules. Heparin, the most potent inhibitor tested, produced the dissociation of the carboxypeptidase from microtubules. Many, but not all, of the other microtubule-associated polypeptides were also dissociated by heparin. Polylysine counteracted the inhibitory and dissociating effects of heparin. Heparin protected tubulin carboxypeptidase against inactivation. These results and previous reports describing, in nervous tissue, the presence of proteoglycans, RNA and basic proteins that inhibit detyrosination, suggest that tubulin carboxypeptidase might be physiol. modulated by elec. charged **macromols**.

CC 7-3 (Enzymes)
IT **Polyelectrolytes**
(**cationic**, tubulin carboxypeptidase of brain reaction with microtubules response to)
IT **9005-49-6**, Heparin, biological studies 24937-83-5, Polyadenylic acid **24967-93-9**, Chondroitin sulfate a 24991-23-9 25104-18-1, Polylysine 25513-46-6, Polyglutamic acid 38000-06-5, Polylysine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(tubulin carboxypeptidase of brain response to)
IT **9005-49-6**, Heparin, biological studies **24967-93-9**, Chondroitin sulfate a
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(tubulin carboxypeptidase of brain response to)
RN 9005-49-6 HCAPLUS
CN Heparin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 24967-93-9 HCAPLUS
CN Chondroitin, 4-(hydrogen sulfate) (9CI) (CA INDEX NAME)

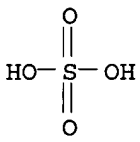
CM 1

CRN 9007-27-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 7664-93-9
CMF H2 O4 S



L39 ANSWER 44 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:25382 HCAPLUS
DOCUMENT NUMBER: 112:25382
TITLE: Shampoo compositions containing poly(oxyethylene) alkyl ether sulfates and cationic **macromolecular** compounds
INVENTOR(S): Kobayashi, Hide
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01153618	A2	19890615	JP 1987-312643	19871210

PRIORITY APPLN. INFO.: JP 1987-312643 19871210

AB Shampoo compns. contain R1R2CHO(CH2CH2O)nSO3M (I) [R1, R2 = linear alkyl; total number of C in R1 and R2 = 7-15; M = alkali metal, alkaline earth metal, ammonium, organic amine; n (average) = 1-25] and cationic **macromol.** compds. The compns. have good foaming and hair conditioning properties and give no irritation to the skin and hairs. A shampoo composition was prepared from I [total number of C in alkyl group = 12-14, M = Na, n (average) = 3] 15, quaternary N-containing cellulose ether (N content 2.0%, mol. weight 100,000) 1, and H2O to 100 weight%.

IC ICM A61K007-075
ICS C11D001-29; C11D003-37
CC 62-3 (Essential Oils and Cosmetics)
ST shampoo polyoxyethylene sulfate cationic **macromol**
IT Shampoos

(containing poly(oxyethylene) alkyl ether sulfates and cationic **macromol**. compds.)
IT **Polyelectrolytes**
(**cationic**, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)
IT **9004-34-6**, Cellulose, biological studies
RL: BIOL (Biological study)
(ethers, quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)
IT **9005-25-8**, Starch, biological studies
RL: BIOL (Biological study)
(quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene)
alkyl ether sulfates and)
IT 25322-68-3D, branched alkyl ethers, sodium sulfates
RL: BIOL (Biological study)
(shampoo compns. containing cationic **macromol**. compds. and)
IT **9004-34-6**, Cellulose, biological studies
RL: BIOL (Biological study)
(ethers, quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene) alkyl ether sulfates and)
RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9005-25-8**, Starch, biological studies
RL: BIOL (Biological study)
(quaternary nitrogen-containing, shampoo compns. containing poly(oxyethylene)
alkyl ether sulfates and)
RN 9005-25-8 HCAPLUS
CN Starch (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 45 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:404834 HCAPLUS
DOCUMENT NUMBER: 111:4834
TITLE: Transglomerular cationic **macromolecular** flux is mediated by a convection-binding mechanism
AUTHOR(S): Whiteside, Catharine I.; Lumsden, Charles J.
CORPORATE SOURCE: Dep. Med., Univ. Toronto, Toronto, ON, M5S 1A8, Can.
SOURCE: American Journal of Physiology (1989), 256(5, Pt. 2), F882-F893
CODEN: AJPHAP; ISSN: 0002-9513
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Glomerular polyanion function was explored using charged and neutral [3H]dextrans in the multiple indicator-dilution experiment Anesthetized dogs received an intrarenal bolus of 125I-labeled albumin (plasma reference), [14C]inulin (glomerular reference), and [3H]dextran (test solute), followed by rapid serial sampling of the renal venous and urine outflows. Reduced urinary recovery of cationic diethylaminoethyl (DEAE) [3H]dextrans [19.0-31.5 Å Stokes-Einstein radius (SER)], compared with neutral [3H]dextran indicated intrarenal binding reversed by excess unlabeled cationic dextran. Tubular microperfusion with cationic [3H]dextran confirmed a pretubular binding site (presumed glomerular). The application of a computer-assisted math. model of convective flux plus reversible binding revealed that binding affinity increased with mol.

size. In vitro high-affinity binding of the same cationic [3H]dextrans to isolated rat glomeruli also increased with mol. size and was inhibited by protamine sulfate. Intrarenal polycation perfusion with protamine sulfate (1.0-3.8 mg/g kidney) or lysozyme (1.1-2.2 mg/g body weight) resulted in intraglomerular binding of anionic [3H]dextran without increased proteinuria or altered glomerular permselectivity to neutral [3H]dextrans ≤33.0 Å SER. Hence, transglomerular cationic solute flux is mediated by a convection-binding mechanism that creates an effective polyvalent barrier.

CC 13-2 (Mammalian Biochemistry)
ST cationic **macromol** flux kidney glomerulus
IT Cations
(**macromol**., transglomerular flux of, convection-binding mechanism mediation of)
IT Biological transport
(of cationic **macromols**. across kidney glomerulus, convection-binding mechanism mediation of)
IT **Polyelectrolytes**
(anionic, **cationic** solute flux mediation by, at kidney glomerulus)
IT Kidney, metabolism
(glomerulus, cationic **macromol**. flux at, convection-binding mechanism mediation of)
IT **9015-73-0**
RL: BIOL (Biological study)
(transglomerular flux of, convection-binding mechanism mediation of)
IT **9015-73-0**
RL: BIOL (Biological study)
(transglomerular flux of, convection-binding mechanism mediation of)
RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

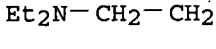
CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O



L39 ANSWER 46 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1988:584627 HCAPLUS
DOCUMENT NUMBER: 109:184627
TITLE: Disease resistance response genes in plants: expression and proposed mechanisms of induction
AUTHOR(S): Kendra, David F.; Fristensky, Brian; Daniels, Catherine H.; Hadwiger, Lee A.
CORPORATE SOURCE: Dep. Plant Pathol., Washington State Univ., Pullman, WA, 99164-6430, USA

SOURCE: UCLA Symposia on Molecular and Cellular Biology, New Series (1987), 48(Mol. Strategies Crop Prot.), 13-24
CODEN: USMBD6; ISSN: 0735-9543
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Several cloned pea genes are activated in temporal correlation with the expression of disease resistance observed cytol. in pea pod tissue inoculated with Fusarium solani f. sp. phaseoli (non-host resistance) or with races of Pseudomonas syringae pv. pisi (race-specific resistance). Chitosan, a minor component of the fungal cell wall is capable of inducing such genes. Some of the same genes were induced in both the non-host and race-specific resistance, suggesting that the single dominant Mendelian traits reportedly involved in race-specific resistance may be involved in the regulation of multiple response genes which are closely associated with the expression of resistance. Proposed mechanisms by which pathogens induce these genes are discussed in reference to (1) the in vitro effects of chitosan both on CD spectra of DNA and on restriction enzyme digests of plasmid DNA; and (2) chitosan as a mutagen in the Ames test.

CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 11

IT **Plasmid and Episome**
(pUC12, supercoiled DNA of, chitosan effects on restriction endonuclease digestion of, plant disease resistance response gene induction in relation to)

IT **71-44-3**, Spermine
RL: PRP (Properties)
(CD spectra of DNA affected by, chitosan induction of plant disease resistance response genes in relation to)

IT 25512-84-9, Poly dG·poly dC.
RL: PRP (Properties)
(CD spectra of, **polycationic** elicitors effect on, chitosan induction of plant disease resistance response genes in relation to)

IT **9012-76-4**, Chitosan
RL: PRP (Properties)
(DNA interaction with, disease resistance response genes induction by, in pea)

IT **71-44-3**, Spermine
RL: PRP (Properties)
(CD spectra of DNA affected by, chitosan induction of plant disease resistance response genes in relation to)

RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

IT **9012-76-4**, Chitosan
RL: PRP (Properties)
(DNA interaction with, disease resistance response genes induction by, in pea)

RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 47 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1988:79186 HCAPLUS
DOCUMENT NUMBER: 108:79186

TITLE: Metal ion extraction by an ultrafiltration process with modified starch derivatives
AUTHOR(S): Chaufer, Bernard; Quiminga, Siguigna A.; Deratani, Andre; Sebille, Bernard
CORPORATE SOURCE: Univ. Paris-Val de Marne, Creteil, 94010, Fr.
SOURCE: Immobilisation Ions Bio-sorption (1986), 149-57. Editor(s): Eccles, Harry; Hunt, Stephen. Horwood: Chichester, UK. CODEN: 56EQA5
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The recovery of Cu and Ni from aqueous solns. was 98-99% by using ultrafiltration in the presence of aminated starch derivs. as chelating agents. The retention coefficient of metal ions was determined by the distribution of membrane pore size, which brings macromol. ligands to pass through the membrane. The ultrafiltration efficiency was determined by the free and bound metal ion ratio and chelating agent-metal complex stability.

CC 54-2 (Extractive Metallurgy)

IT 106-89-8D, reaction products with starch and **oligoamines** 107-15-3D, reaction products with epichlorohydrin and starch 111-42-2D, reaction products with epichlorohydrin and starch 112-57-2D, reaction products with epichlorohydrin and starch **9005-25-8D**, Starch, r.p. with epichlorohydrin and **oligoamines**, uses and miscellaneous
RL: PROC (Process)
(for copper and nickel recovery by ultrafiltration)

IT **9004-35-7** 83382-19-8 89234-36-6 112955-61-0
RL: PROC (Process)
(for ultrafiltration of copper and nickel with aminated starch chelating agents)

IT **9005-25-8D**, Starch, r.p. with epichlorohydrin and **oligoamines**, uses and miscellaneous
RL: USES (Uses)
(for copper and nickel recovery by ultrafiltration)

RN 9005-25-8 HCAPLUS
CN Starch (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **9004-35-7**
RL: PROC (Process)
(for ultrafiltration of copper and nickel with aminated starch chelating agents)

RN 9004-35-7 HCAPLUS
CN Cellulose, acetate (9CI) (CA INDEX NAME)

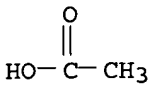
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



L39 ANSWER 48 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1987:441096 HCAPLUS
DOCUMENT NUMBER: 107:41096
TITLE: Stabilizers for polymers
INVENTOR(S): Minagawa, Motonobu; Nakahara, Yutaka; Shibata, Toshihiro; Hida, Etsuo
PATENT ASSIGNEE(S): Adeka Argus Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62050342	A2	19870305	JP 1985-191279	19850830
JP 05018355	B4	19930311		
EP 217149	A2	19870408	EP 1986-111999	19860829
EP 217149	A3	19880608		
EP 217149	B1	19910130		
R: BE, CH, DE, FR, GB, LI, NL				
US 4885323	A	19891205	US 1987-138750	19871228

PRIORITY APPLN. INFO.: JP 1985-191279 19850830
US 1986-902380 19860902

AB The hindered amines I (R = H, alkyl, alkenyloxyl, acyl; R1, R2 = H, alkyl, oxyalkylene; n = 2-40) are light stabilizers (0.001-5 phr) for polymers. Thus, polypropylene containing 0.2 phr stearyl- (di-tert-butyl-4-hydroxyphenyl)propionate and 0.3 phr I (R = H; R1, R2 = Bu; n = 10) gave an 0.3-mm sheet with UV resistance 880 and 820 h after 0 and 24 h, resp., in H2O at 80°.

IC ICM C08K005-34
ICS C08L101-00
ICA C08G073-08
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 42
IT Light stabilizers
(hindered **oligoamines**, for polymers)
IT Coating materials
Urethane polymers, uses and miscellaneous
RL: USES (Uses)
(light stabilizers for, hindered **oligoamines** as)
IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-08-1 9003-56-9, ABS **9004-36-8**, Cellulose acetate butyrate 9010-79-1, Ethylene-propylene copolymer
RL: USES (Uses)
(light stabilizers for, hindered **oligoamines** as)
IT **9004-36-8**, Cellulose acetate butyrate
RL: USES (Uses)
(light stabilizers for, hindered **oligoamines** as)
RN 9004-36-8 HCAPLUS
CN Cellulose, acetate butanoate (9CI) (CA INDEX NAME)

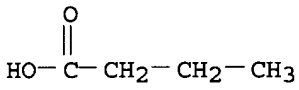
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

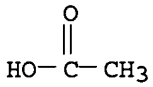
CM 2

CRN 107-92-6
CMF C4 H8 O2



CM 3

CRN 64-19-7
CMF C2 H4 O2



L39 ANSWER 49 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1986:494142 HCAPLUS
DOCUMENT NUMBER: 105:94142
TITLE: Polymer-coated particles having immobilized metal ions on their surfaces
INVENTOR(S): Porath, Jerker; Lindahl, Mats
PATENT ASSIGNEE(S): Exploaterings AB T.B.F., Swed.
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 179039	A2	19860423	EP 1985-850315	19851008
EP 179039	A3	19861230		
EP 179039	B1	19910703		
R: DE, FR, GB				
SE 8405241	A	19860420	SE 1984-5241	19841019
SE 454885	B	19880606		
SE 454885	C	19880915		
US 4677027	A	19870630	US 1985-786857	19851011
JP 61118398	A2	19860605	JP 1985-234380	19851019
JP 02025920	B4	19900606		

PRIORITY APPLN. INFO.: SE 1984-5241 19841019

AB A product for the separation of biol. mols. constitutes a solid phase (e.g. magnetite) in which immobilized metal ions on the surface are substituted with a hydrophilic polymer, a polymer derivative, or a polymer aggregate through a metal chelate bond or metal sulfide bond by chemisorption. For example, magnetic particles were shaken with iminodiacetate (IDA) dextran and the resulting IDA-dextran-bound metal particles were activated with divinyl sulfone (DVS), slurried with a buffer solution containing dextran T 500 and again activated with DVS. A portion of the activated particles was coupled with colominic acid and these particles were used for the elution of K99 pilae from Escherichia coli. A 20-fold increased elution was observed compared with colomine-substituted Sephadix G 10.

IC ICM B01J020-32
ICS B01D015-08

CC 9-10 (Biochemical Methods)

IT **Peptides, uses and miscellaneous**
Polyamides, uses and miscellaneous
Polyesters, uses and miscellaneous
Polyethers
Polysaccharides, uses and miscellaneous
Proteins
RL: RCT (Reactant); RACT (Reactant or reagent)
(chemisorption of, on particles with immobilized metal ions for biol. **macromol**. separation)

IT Chelating agents
(chemisorption of, to particles with immobilized metal ions for biol. **macromol**. separation)

IT Chemisorption
(of polymers, on particles with immobilized metal ions for biol. **macromol**. separation)

IT Magnetic substances
(particles, with immobilized metal ions, polymers chemisorption to, for biol. **macromol**. separation)

IT Metals, uses and miscellaneous
RL: USES (Uses)
(polymer-coated particles with immobilized, for biol. **macromol**. separation)

IT Amines, uses and miscellaneous
Nucleotides, uses and miscellaneous
RL: RCT (Reactant); RACT (Reactant or reagent)
(poly-, chemisorption of, on particles with immobilized metal ions for biol. **macromol**. separation)

IT Alcohols, uses and miscellaneous
RL: RCT (Reactant); RACT (Reactant or reagent)
(polyhydric, chemisorption of, on particles with immobilized metal ions for biol. **macromol**. separation)

IT 79-06-1D, polymers 79-08-3D, reaction products with tetraethylenepentamine **112-57-2D**, reaction products with bromoacetic acid **9004-54-0**, reactions **9004-54-0D**, iminodiacetic acid derivs. 9012-36-6 9037-55-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(chemisorption of, on particles with immobilized metal ions for biol. **macromol**. separation)

IT 142-73-4D, dextran derivs.
RL: RCT (Reactant); RACT (Reactant or reagent)
(chemisorption of, on particles with immobilized metal ions, for biol. **macromol**. separation)

IT 1309-38-2, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)

(particles, with immobilized metal ions, polymers chemisorption to, for biol. **macromol**. separation)
IT 77-77-0 25322-68-3
RL: ANST (Analytical study)
(polymer-coated particles with immobilized metal ions activation with, for biol. **macromol**. separation)
IT 9013-15-4
RL: ANST (Analytical study)
(polymer-coated particles with immobilized metal ions coupled to, for biol. **macromol**. separation)
IT **112-57-2D**, reaction products with bromoacetic acid **9004-54-0**, reactions **9004-54-0D**, iminodiacetic acid derivs.
RL: RCT (Reactant); RACT (Reactant or reagent)
(chemisorption of, on particles with immobilized metal ions for biol. **macromol**. separation)
RN 112-57-2 HCAPLUS
CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]- (9CI) (CA INDEX NAME)

$H_2N-CH_2-CH_2-NH-CH_2-CH_2-NH-CH_2-CH_2-NH-CH_2-CH_2-NH_2$

RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9004-54-0 HCAPLUS
CN Dextran (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 50 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:155297 HCAPLUS
DOCUMENT NUMBER: 102:155297
TITLE: A study of polycation-anionic-surfactant systems
AUTHOR(S): Leung, P. S.; Goddard, E. D.; Han, C.; Glinka, C. J.
CORPORATE SOURCE: Spec. Chem. Div., Union Carbide Corp., Tarrytown, NY, 10591, USA
SOURCE: Colloids and Surfaces (1985), 13(1), 47-62
CODEN: COSUD3; ISSN: 0166-6622
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The interaction of SDS with 2 cationic polyelectrolytes, Polymer JR, a cationic cellulose ether, and Reten, a synthetic vinyl copolymer, was studied. The study emphasizes small angle neutron scattering but also includes viscosity and dye-solubilization, measurements. Small addns. of SDS to 1% Polymer JR solns. lead to intermol. interactions between the polymer chains via the bound surfactant, whereas in the more flexible and globular vinyl polyelectrolyte, intramol. interaction is favored. Just into the resolubilization zone, where excess anionic surfactant is present (.apprx.1.5% SDS), Polymer JR favors a polymer micellar association, whereas the more flexible Reten polymer seems to stabilize a structure involving association of surfactant into smaller units, perhaps surfactant pairs. In both cases the characteristic interaction peak of SDS micelles is absent in the scattering profile. When the surfactant is in large excess (5%) this peak returns, i.e., micellar structures predominate in both systems, probably with the **macromol**. woven into the micellar domains,

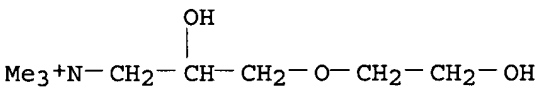
resembling an entangled string of beads.
CC 66-2 (Surface Chemistry and Colloids)
IT **Polyelectrolytes**
(**cationic**, solubilization of, in surfactant micelles)
IT 35429-19-7 **81859-24-7**
RL: PRP (Properties)
(interaction of, with SDS, micelle structure in relation to)
IT **81859-24-7**
RL: PRP (Properties)
(interaction of, with SDS, micelle structure in relation to)
RN 81859-24-7 HCAPLUS
CN Cellulose, 2-hydroxyethyl 2-[2-hydroxy-3-(trimethylammonio)propoxy]ethyl 2-hydroxy-3-(trimethylammonio)propyl ether, chloride (9CI) (CA INDEX NAME)

CM 1

CRN 170553-71-6
CMF C8 H20 N O3 . x C6 H16 N O2 . x C2 H6 O2 . x Unspecified

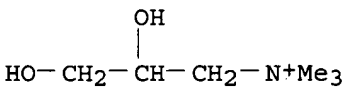
CM 2

CRN 170344-46-4
CMF C8 H20 N O3



CM 3

CRN 44814-66-6
CMF C6 H16 N O2



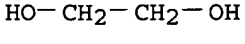
CM 4

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 5

CRN 107-21-1
CMF C2 H6 O2



L39 ANSWER 51 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:109393 HCAPLUS
DOCUMENT NUMBER: 102:109393
TITLE: Transfer of **macromolecules** from a chromatographic substrate to an immobilization matrix
INVENTOR(S): Gershoni, Jonathan M.
PATENT ASSIGNEE(S): Yale University, USA
SOURCE: Fr. Demande, 58 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2540629	A1	19840810	FR 1984-1805	19840207
FR 2540629	B1	19890922		
US 4512896	A	19850423	US 1983-464609	19830207
CA 1207737	A1	19860715	CA 1983-428218	19830516
WO 8403055	A1	19840816	WO 1984-US139	19840127
W: AU, DK, JP				
RW: BE, CH, DE, GB, NL, SE				
AU 8424978	A1	19840830	AU 1984-24978	19840127
AU 577276	B2	19880922		
EP 138841	A1	19850502	EP 1984-900827	19840127
EP 138841	B1	19931020		
R: BE, CH, DE, GB, LI, NL, SE				
JP 60501126	T2	19850718	JP 1984-500904	19840127
JP 03076868	B4	19911206		
EP 343387	A1	19891129	EP 1989-107443	19840127
EP 343387	B1	19940601		
R: BE, CH, DE, GB, LI, NL, SE				
IL 70866	A1	19870916	IL 1984-70866	19840203
US 4601828	A	19860722	US 1985-688861	19850104

PRIORITY APPLN. INFO.:
US 1983-464609 19830207
EP 1984-900827 19840127
WO 1984-US139 19840127

AB A method is described for the transfer by electroelution of **macromols**. (e.g., proteins, nucleic acids) from a chromatog. substrate (e.g., polyacrylamide gel) to an immobilization matrix such as a modified-charge organic hydrophilic microporous membrane (e.g., cellulose ester or polyamide membrane) with a water-soluble cationic agent bound on its surface or a porous sheet impregnated with a polymeric microporous membrane. Following electrophoretic transfer of proteins, the membrane is inactivated by incubation with bovine serum albumin or Hb and is then incubated with ligands (e.g., lectins, antibodies). Thus, a modified-charge Nylon 66 membrane was prepared by immersing a Nylon 66 membrane in Hercules 1884 (4%) or Hercules R 4308 (2%) resin, followed by washing and drying at 110° for 3 min. Examples are also given of the use of the membranes for the electrophoretic transfer of erythrocyte proteins and acetylcholine receptors.

IC G01N027-26; G01N031-08; G01N033-48
CC 9-7 (Biochemical Methods)
ST **macromol** chromatog substrate transfer electroelution; membrane **macromol** electroelution transfer; electrophoresis gel **macromol** transfer membrane
IT Polyester fibers

RL: ANST (Analytical study)
(modified-charge membrane containing, biol. **macromol**. transfer from electrophoresis gel in relation to)

IT Polyamide fibers, uses and miscellaneous
RL: USES (Uses)
(modified-charge membrane of, biol. **macromol**. transfer from electrophoresis gels in relation to)

IT Membrane, biological
(modified-charge, **macromol**. transfer of, after electrophoresis)

IT Deoxyribonucleic acids
Macromolecular compounds
Nucleic acids
Proteins
RL: PRP (Properties)
(transfer of, from electrophoresis gel onto modified-charge membrane, by electroelution)

IT Electrophoresis and Ionophoresis
(gel, of biol. **macromols**., transfer after, onto modified-charge membrane)

IT 64-18-6, uses and miscellaneous 67-56-1, uses and miscellaneous
RL: ANST (Analytical study)
(in modified-charge membrane preparation, for biol. **macromol**. transfer from electrophoresis gel)

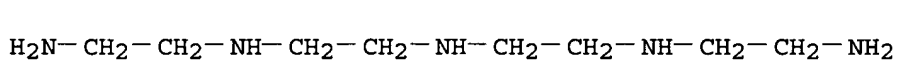
IT **112-57-2** 2425-79-8 73071-59-7 82600-37-1 82601-34-1
82601-43-2 129807-53-0
RL: ANST (Analytical study)
(microporous membrane charge modification by, biol. **macromol**. transfer from electrophoresis gel in relation to)

IT **9004-34-6D**, esters
RL: ANST (Analytical study)
(modified-charge membrane of, biol. **macromol**. transfer from chromatog. substrate to)

IT 32131-17-2P, reactions
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reaction of, with Hercules resin, for modified-charge membrane preparation, biol. **macromol**. transfer from chromatog. substrate in relation to)

IT **112-57-2**
RL: ANST (Analytical study)
(microporous membrane charge modification by, biol. **macromol**. transfer from electrophoresis gel in relation to)

RN 112-57-2 HCAPLUS
CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]- (9CI) (CA INDEX NAME)



IT **9004-34-6D**, esters
RL: ANST (Analytical study)
(modified-charge membrane of, biol. **macromol**. transfer from chromatog. substrate to)

RN 9004-34-6 HCAPLUS
CN Cellulose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L39 ANSWER 52 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1984:32371 HCAPLUS
DOCUMENT NUMBER: 100:32371
TITLE: Release of calcium from suspension-cultured Glycine max cells by chitosan, other **polycations**, and polyamines in relation to effects on membrane permeability
AUTHOR(S): Young, David H.; Kauss, Heinrich
CORPORATE SOURCE: Fachbereich Biol., Univ. Kaiserslautern, Kaiserslautern, D-6750, Fed. Rep. Ger.
SOURCE: Plant Physiology (1983), 73(3), 698-702
CODEN: PLPHAY; ISSN: 0032-0889
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Treatment with chitosan of suspension-cultured G. max cells labeled with 45Ca2+ caused a rapid release of Ca, which was complete much earlier than the chitosan-induced leakage of intracellular electrolytes and probably reflects Ca loss primarily from the cell wall and (or) plasma membrane. A linear correlation was found between Ca release from chitosan-treated whole cells or isolated cell walls and the amount of chitosan bound. Other **polycations** (poly-L-lysine, histone, DEAE-dextran, and protamine sulfate), low-mol.-weight polyamines (spermine, spermidine, and putrescine), and polyanions (polygalacturonate and poly-L-aspartate, which act as chelating agents) also released Ca from whole cells and isolated cell walls; however, only the **polycations** increased membrane permeability. Poly-L-lysines of differing mol. weight showed a similar ability to release Ca, but their effect on membrane permeability increased with increasing mol. weight The results suggest that the effect of **polycations** on permeability is not the direct result of Ca displacement from the cell surface but is probably due to cross-linking of surface components. The order of effectiveness of inorg. cations in displacing Ca from whole cells and isolated cell walls was Ca2+, Ba2+, Sr2+ > Mg2+ > K+, Na+.

CC 11-8 (Plant Biochemistry)
ST soybean cell calcium release chitosan; **polycation** calcium release soybean cell; polyamine calcium release soybean cell
IT Soybean
(calcium release from cells of, by chitosan and polyamines and **polycations**, membrane permeability in relation to)
IT Cell membrane
Cell wall
(permeability of, in soybean, calcium release by chitosan and polyamines and **polycations** in relation to)
IT 56-87-1, biological studies 67-66-3, biological studies **71-44-3** 110-60-1 124-20-9 3416-24-8 9002-93-1 9008-22-4 **9012-76-4** **9015-73-0** 9046-38-2 **25104-18-1** **25608-40-6** **38000-06-5**
RL: BIOL (Biological study)
(calcium release by, from soybean cells, membrane permeability in relation to)
IT **71-44-3** **9012-76-4** **9015-73-0** **25104-18-1** **25608-40-6** **38000-06-5**
RL: BIOL (Biological study)
(calcium release by, from soybean cells, membrane permeability in relation to)
RN 71-44-3 HCAPLUS
CN 1,4-Butanediamine, N,N'-bis(3-aminopropyl)- (8CI, 9CI) (CA INDEX NAME)

$H_2N-(CH_2)_3-NH-(CH_2)_4-NH-(CH_2)_3-NH_2$

RN 9012-76-4 HCAPLUS
CN Chitosan (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O

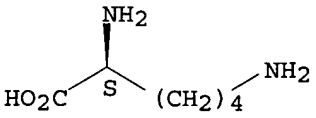
$Et_2N-CH_2-CH_2-OH$

RN 25104-18-1 HCAPLUS
CN L-Lysine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.

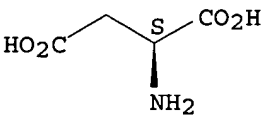


RN 25608-40-6 HCAPLUS
CN L-Aspartic acid, homopolymer (9CI) (CA INDEX NAME)

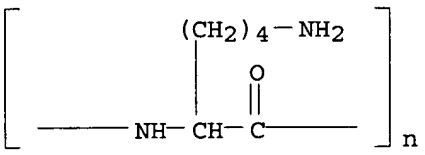
CM 1

CRN 56-84-8
CMF C4 H7 N O4

Absolute stereochemistry. Rotation (+).



RN 38000-06-5 HCAPLUS
CN Poly[imino[(1S)-1-(4-aminobutyl)-2-oxo-1,2-ethanediyl]] (9CI) (CA INDEX NAME)



L39 ANSWER 53 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1983:161210 HCAPLUS
DOCUMENT NUMBER: 98:161210
TITLE: Vinyl polymerization. 415. Effect of polyethylene glycol on polymerization of methyl methacrylate initiated by sodium salt-type **macromolecular** electrolytes
AUTHOR(S): Ouchi, Tatsuro; Nishinakama, Kazuhiro; Beika, Nobuaki; Imoto, Minoru
CORPORATE SOURCE: Fac. Eng., Kansai Univ., Osaka, 564, Japan
SOURCE: Polymer Bulletin (Berlin, Germany) (1983), 9(8-9), 396-401
CODEN: POBUDR; ISSN: 0170-0839
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of polyethylene glycol (I) [25322-68-3] were studied in the radical polymerization of Me methacrylate [80-62-6] initiated with aqueous solns. of **macromol.** electrolytes such as Na polyvinylphenolate [85437-37-2] and Na polycarboxylate, e.g., alternating di-Na maleate-styrene copolymer [37286-89-8]. I promoted polymns. initiated by the Na salt-type **macromol.** electrolytes.
CC 35-3 (Chemistry of Synthetic High Polymers)
IT **Polyelectrolytes**
(**cationic**, aqueous, sodium salts, catalysts, for polymerization of Me methacrylate, polyoxyethylene effect on)
IT **9004-32-4** 27379-05-1 35177-74-3 85437-37-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for polymerization of Me methacrylate, polyoxyethylene effect on)
IT **9004-32-4**
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for polymerization of Me methacrylate, polyoxyethylene effect on)
RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

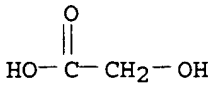
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



L39 ANSWER 54 OF 54 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1980:491491 HCAPLUS
DOCUMENT NUMBER: 93:91491
TITLE: Preparation of intact chloroplasts by chemically-induced lysis of the green alga Dunaliella marina
AUTHOR(S): Kombrink, Erich; Woeber, Guenter
CORPORATE SOURCE: Fachber. Chem., Philipps-Univ., Marburg, D-3550, Fed. Rep. Ger.
SOURCE: Planta (1980), 149(2), 123-9
CODEN: PLANAB; ISSN: 0032-0935
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A method for the isolation in high yield of intact chloroplasts from the unicellular green alga D. marina (Volvocales) is described. This procedure uses chemical induced lysis of cells with the polycationic **macromols**., DEAE-dextran (mol. weight 500,000) or poly-D,L-lysine (mol. weight 30,000-70,000). Reaction conditions were optimized with respect to obtaining a high yield of intact chloroplasts, after isopycnic centrifugation in a linear sucrose d. gradient, by varying the concentration of polycation and the temperature and pH of incubation. Broken chloroplasts devoid of the stromal marker enzymes fructose bisphosphate phosphatase and ribulose bisphosphate carboxylase, but containing mitochondrial (fumarase) and microbody (catalase) contamination, were banded at a buoyant d. of 1.18 g/cm3. Intact chloroplasts, as indicated by their retention of alkaline fructose bisphosphate phosphatase and ribulose bisphosphate carboxylase, were found in 30% yield (chlorophyll in intact cells, 100%) at an equilibrium d. of 1.24 g/cm3. Contamination by cytoplasmic material (pyruvate kinase), mitochondria, and microbodies was <8% each.

CC 9-13 (Biochemical Methods)
ST chloroplast isolation Dunaliella; DEAE dextran chloroplast isolation; polylysine chloroplast isolation; lysine homopolymer chloroplast isolation; polycation **macromol** chloroplast isolation; polymer chloroplast isolation
IT **Cations**
(**polyvalent macromol**., in chloroplast isolation from Dunaliella marina)
IT **9015-73-0** 26714-32-9 26913-65-5
RL: ANST (Analytical study)
(in chloroplast isolation from Dunaliella marina)
IT **9015-73-0**
RL: ANST (Analytical study)
(in chloroplast isolation from Dunaliella marina)
RN 9015-73-0 HCAPLUS
CN Dextran, 2-(diethylamino)ethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 9004-54-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 100-37-8
CMF C6 H15 N O

$Et_2N-CH_2-CH_2-OH$